

American Artisan

and Hardware Record

Sheet Metal Work-Warm Air Heating

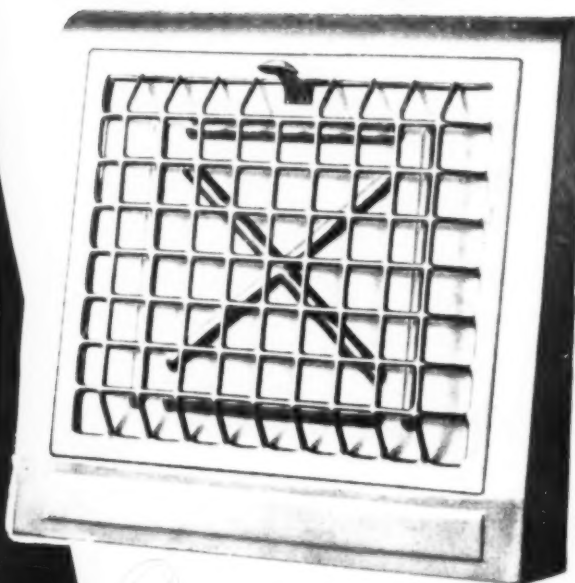
Vol. 95, No. 8

CHICAGO, FEBRUARY 25, 1928

\$2.00 Per Year

*The
Greatest
Register
Developed
in
20 years*

**WALWORTH
STEEL**



Note these features

LOCKTITE FACE

Removable 2 piece -- no screws or turnbuckles -- CONVEX FACE.

Any finish desired.

baseboard
REGISTER

Meets all Standard Code Requirements --

Full 20 gauge extra heavy steel.

Write for literature today.

Manufactured by

The FOREST CITY - WALWORTH RUN FOUNDRIES CO.
CLEVELAND, OHIO U. S. A.



These Advantages **FREE**

BEFORE we introduced our new pipe with the Lamedge Jiffy-Joint feature, we urged comparison of our product—point by point—with any similar products on the market as a basis for soliciting your business.

That, we believed to be the only fair and sound method of proving the claims made for the various products. Such examination, too, we knew would reveal the obvious superiority of LAMNECK'S in design, flawless workmanship and materials.

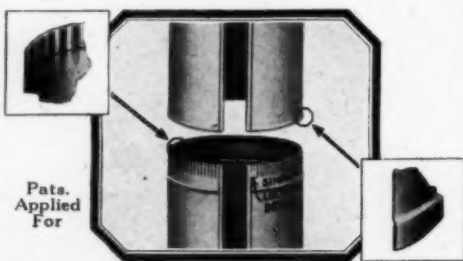
Now, we have

gone a step farther with the Lamedge Jiffy-Joint giving you this added feature with its four outstanding advantages **FREE**. This feature costs us money to build into our products but we pass it on to you at no increase in cost.

LAMNECK'S sell at the same old price. The new feature is thrown in as a bonus. It is for you, your customers, your reputation. Investigate now. Use the coupon below for catalog or sample. The W.

E. Lamneck Co.

416-432 Dublin Avenue
Columbus, Ohio



LAMNECK SIMPLIFIED PIPE AND FITTINGS

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Gentlemen:

Without obligation, please send me ☐ Catalog ☐ Latest Discount Sheet ☐ Sample _____

Name _____

Address _____



This is the Waist High Shaker

NOW optional equipment on all SUPERIOR Furnaces — SUPER-SMOKELESS as well as the regular line — operating flat grates with amazing ease. This type of grate is preferred by many dealers and home owners.

But whether you give your customers the flat grate with waist high shaker, or the revolving, triangular grate, you insure them a dust-proof ash-pit because of the frameless door; the feed door construction is also frameless; and direct connected cleanout, large humidifier, and other talking points too numerous to mention.

It is just such features as these, plus the carburetor on the SUPER-SMOKELESS Furnace, that make the SUPERIOR Line so easily sold and so profitable to the dealer.

Utica Division
Richardson & Boynton Company
Successor to Furnace Department
UTICA HEATER COMPANY
UTICA, N. Y.

New York Office: 260 Fifth Avenue
Chicago Office: 3639-45 S. Ashland Ave.

Makers of Superior Pipe and New Idea Pipeless Furnaces

**SUPERIOR
SUPER-SMOKELESS
WARM AIR FURNACE**



WRITE us for interesting details of our Sales Development Plan, with full particulars of the SUPER-SMOKELESS Furnace and its double combustion — burning all fuels smokelessly and with great efficiency.

SUPERIOR DEALERS ARE EXCEPTIONALLY LOYAL ---- WHY?

Chinook Riveted-Steel Construction Has Never Been Duplicated By Any Manufacturer

at a price
as low as

\$56⁰⁰

*[Less Your Cash and
Quantity Discounts]*

High Quality at Low Price
Makes the Chinook a Steel Furnace
for Close Competition Work



Until the experienced engineers who design and build powerful railway locomotives resort to new methods we shall continue to claim that riveted and calked seams are the best where permanent gas-tight construction is needed. Other methods of furnace construction are cheaper but not good enough for the Chinook, even tho it is an exceptionally low priced furnace.

We have designed the Chinook riveted steel furnace to meet the demands of the dealer who is called upon to furnish a satisfactory heating plant for the contractor, builder or home owner where price is an important consideration. For \$56.00 we have produced a riveted steel furnace of ex-

actly the same construction that is used in the highest quality steel furnace on the American market. We have combined in this furnace all of the essentials that are so desirable to the home owner such as increased radiating surface, rocker type grates, improved water pan or humidifier and brick lined fire pots.

Only quantity production enables us to produce a furnace of the Chinook type at such a low price. It will pay you well to investigate further our claims for the Chinook furnace. Order a sample Chinook furnace and compare it with other makes and you will be surprised to note the thickness of the steel, the fine workmanship, the gas-tight construction and the attractive general appearance of the Chinook.



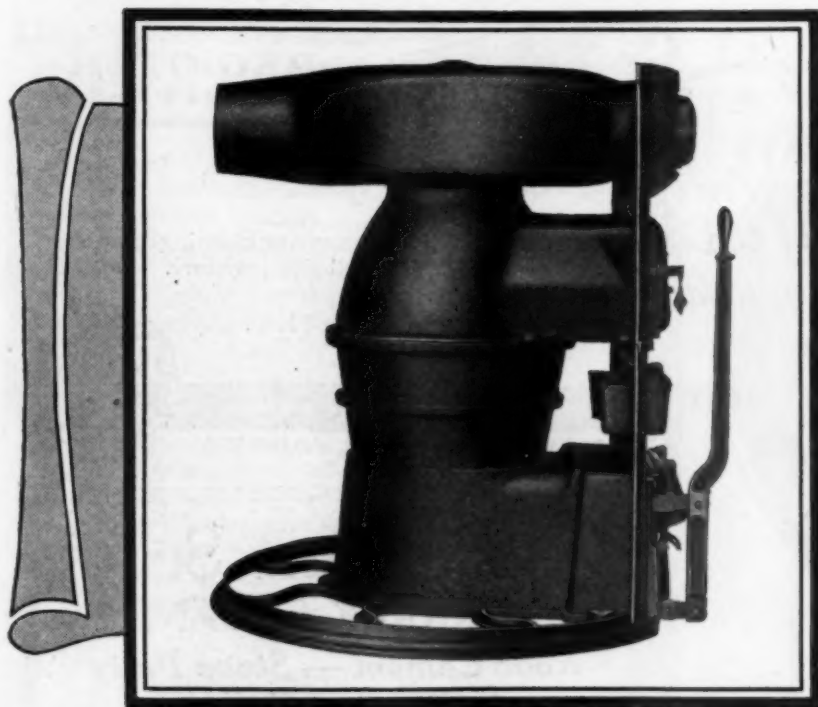
Chinook Fire Pot and
Rocking Grates

LENNOX FURNACE COMPANY, INC.

Marshalltown, Iowa

Syracuse, New York

Mention AMERICAN ARTISAN in your reply—Thank you!



**New
improved
immeasurably
better**

The new
SUNBEAM
WARM-AIR FURNACES
1000 Series

NEW from the one-piece base to the one-piece radiator—new feed section and combustion chamber—new fire pots—new grates—new ash pit—new shaking device—new hot blast—new efficiency—new ruggedness—the 1000 Series, Sunbeam Furnace line is entirely new, throughout.

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New precision standards mark the manufacture of this recent addition to the Sunbeam line. For example: Doors, feed and ash pit, fit air-tight on all four sides—always. They are

machine-ground with feed sections and ashpits in special jigs, so that this air-tight union will be found without exception on every Sunbeam Furnace, 1000 Series. Absolute control of the fire is assured.

Manufacturing costs are increased by such painstaking methods, which, however, are necessary, if the claim of every desirable refinement and improvement is to be based on fact.

In the new 40-page Catalog and Heating Manual you will find the complete Sunbeam Furnace line completely illustrated and described. Ask for a copy. Use the coupon. Learn more about Sunbeam Furnaces and how they will enable you to obtain the bulk of the heating business in your locality.

THE FOX FURNACE COMPANY, Elyria, Ohio

Largest Makers of Heating Equipment in the World

CONSTRUCTION FEATURES

1. Massive Radiator, Clean-out and Smoke Collar cast in one piece.
2. Feed Section extends outside of front of furnace.
3. Ash Pit extends outside of front of furnace.
4. More than 20 feet of joint within warm air chamber have been eliminated.
5. Two types of grates—Boiler or Flat—are available.
6. Easy-to-operate, upright shaking lever.
7. All joints are deep, clean-cut cup joints.
8. Doors and door openings are machine-ground in special jig to insure air-tight fit and absolute control of fire.
9. Heating unit is centered.
10. One-piece base with high casing flange reduces installation time and costs.
11. All castings are machine-molded. Are extra-heavy; uniform in thickness and strength.



The Fox Furnace Company,
Elyria, Ohio

Please send a copy of the new 40-page Catalog and Heating Manual.

Name.....

Address.....

City and State.....

A-3

Say you saw it in AMERICAN ARTISAN—Thank you!



Jobbers and the dealer who sells a *large volume* of furnaces will find in *Agricola* the things they need to raise the *quality* of their *quantity* business.



Agricola is a better furnace because it is new and made by the newest methods.

Agricola is a large volume furnace because it is produced in large volume at the lowest possible manufacturing cost.

Because it is made in the fastest growing furnace plant in America—one of the largest and best equipped furnace factories in operation.

Let us show you how *Agricola* will build quality volume for you in 1928.

Agricola Furnace Company
GADSDEN, ALABAMA



"GEM" ADJUSTABLE REGISTER SHIELDS

Sell your customer on the idea that "Gem" Register Shields in every room will greatly lessen spring cleaning drudgery. Easily adjustable to all size registers. Durable and attractive.

Floor Shield retails at \$1.50.
Wall Shield at 75c.



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Tons of Repair Parts Carried in Stock

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PATTERNS

FOR STOVES AND HEATERS FIRST-CLASS
IN WOOD and IRON
VEDDER PATTERN WORKS ESTABLISHED 1835 TROY, N. Y.

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QUINCY, ILLINOIS

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APPLIED to furnace buying, the "Golden Rule" is a yardstick. Heating capacity depends on the *actual* grate area and heating surface. Comparison will prove the superiority of the American Self-Cleaning Furnace.

This furnace is massively constructed throughout, especial attention having been given to essential parts—the grates, firepot, fuel and ash doors, and heating surface—to assure permanence and stability.

Advantages of the American

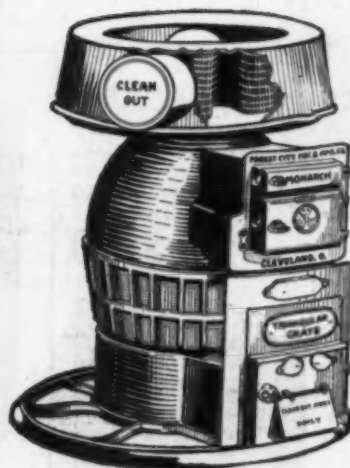
1. Self-Cleaning
2. Covered Joints
3. Feed Section thru Front
4. Ball-bearing Grates
5. Deep, Roomy Ash Pit
6. Large Ash Pit Door
7. Large Double Fuel Door
8. Two-Piece Slotted Firepot
9. Full Proportioned
10. Entire Grate Removed thru Ash Pit Door

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Dept. 300



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**AMERICAN FOUNDRY
AND FURNACE CO.**
BLOOMINGTON - - ILLINOIS

MONARCH FURNACES



TRULY AMAZING!

That any one Furnace can possess
all the features that are found in

THE MONARCH

It's especially famous for its

DEEP, ROOMY ASH PIT that makes it easy to remove ashes and gives a large amount of cold air underneath the grate bars, adding greatly to the life of the furnace.

EXTRA HEAVY FIRE POT with its reinforced "I beam" construction. Made in two parts to eliminate any chance of warping or cracking.

THE FEED SECTION with its dome and large throat is again a masterpiece of properly designed construction. Large double feed doors that make it so popular.

THE RADIATOR is also extra heavy and designed to ensure the easy, free movement with maximum heat travel.

These with many other important features combine to make MONARCH and NIAGARA Furnaces the worth-while heating plants they have proved to be.

Write us for our 1928 Dealers'
Proposition.

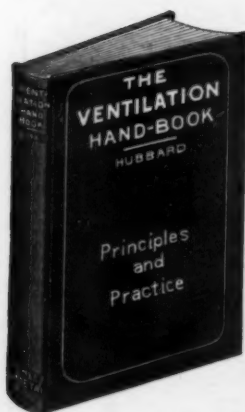
**THE FOREST CITY-WALWORTH RUN
FOUNDRIES CO.**

1220 Main Avenue

Cleveland, Ohio

Also Manufacturers of the Famous Niagara Furnaces

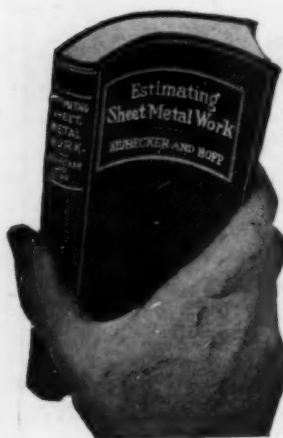
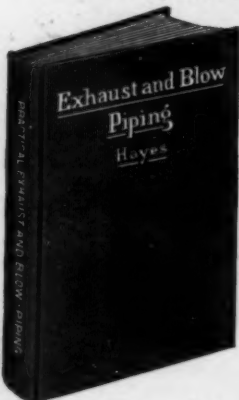
These books make your work easier— and profits larger



THE VENTILATION HANDBOOK A PRACTICAL book designed to cover the principles and practice of ventilation as applied to furnace heating; ducts, flues and dampers for gravity heating; fans and fan work for ventilation and hot blast heating by means of a comprehensive series of questions, answers and very plain descriptions easy to understand. By Charles L. Hubbard.
Price.....**\$2.00**

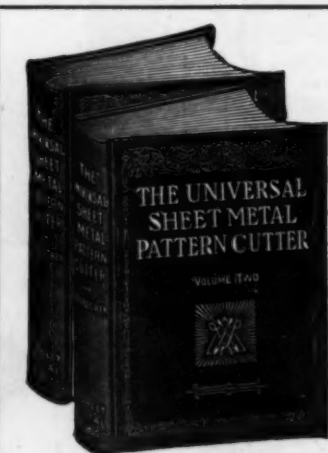
HAYES PRACTICAL EXHAUST AND BLOW PIPING

EXHAUST and Blow Piping has had an unusually big demand. A fresh supply is new off the press and is in our hands for immediate delivery. It has an invaluable treatise on the planning, cost, estimation and installation of fan piping in all its branches, giving all necessary guidance in fan work blower and separator construction. 159 pages, 5 x 8. 51 figures. By Hayes. Cloth**\$2.00**



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ANOTHER good book by Wm. Neubecker and A. Hopp. This is a new edition. A manual of practical self-instruction in the art of pattern drafting and construction work in light and heavy gauge metal, including skylights and roofing, cornice work, etc. 417 pages; 4 1/2 x 7 in.; 215 figures. Cloth.
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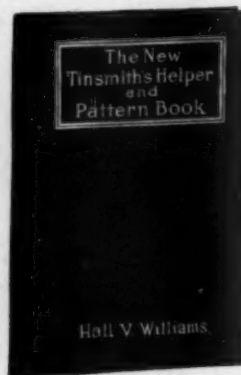


Every Sheet Metal worker should own this 2 Volume Encyclopedia of Sheet Metal Working

THE most practical and useful treatises on the subject. Work of all the branches of the trade and the broadest scope of details are found—inside and outside work—small jobs and the most complicated are shown, explained and profusely illustrated. The first volume deals with all types and kinds of inside small and large sheet metal work. The second volume deals with the more advanced branches of sheet metal work, in fact is largely devoted to the architectural end of the business. It consists of 400 double column pages and is illustrated with 711 engravings showing all methods under treatment, as well as perspective views of the subjects of the patterns, and other demonstrations in their finished state. It includes drawing, full sized detailing and lettering, development and construction of all forms of sheet metal construction work. The volumes are bound in heavy cloth and each measures 9x12 in. Each contains over 380 pages and 680 original drawings. Price each.....**\$7.50**

\$3.00

THE NEW METAL WORKER PATTERN BOOK IT contains solutions of individual pattern problems in every department of sheet metal work, giving the complete methods of laying out all forms of work. It covers every detail from the selection of tools, through Linear and Geometrical Drawing, to development of Difficult Problems by Triangulation. This revised edition contains a series of automobile patterns. These include laying out guards, fenders, cowls, skirts, hoods, etc. It has 514 pages, 895 illustrations and diagrams, measures 9x12 inches and is cloth bound.
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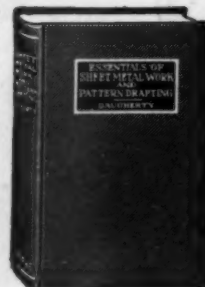


THE NEW TINSMITH'S HELPER AND PATTERN BOOK

A NEW edition of one of the most popular books on tin-smithing and elementary sheet metal work. The contents of this new edition are new excepting the chapter on Mensuration, which has been re-arranged and amplified, and possibly some fifty pages of problems and tables which are classified to the phase of the work they cover. This book covers simple geometry and every phase of modern pattern cutting, from the making of every type of Seam, Lap and Joint, to Conical Problems and Tinware, Elbows, Piping, Ducts, Gutters, Leaders, Cornice and Skylight Work and Furnace Fittings, 352 pages, 247 figures and 165 tables, flexible leather, 4 1/2 x 6 inches. By Hall V. Williams. Price.....**\$3.00**

ESSENTIALS OF SHEET METAL WORK AND PATTERN DRAFTING

A BOOK produced by the combined efforts of L. Broemel and the late Professor J. S. Daugherty, instructor in Sheet Metal Work at the Carnegie Institute of Technology. Pattern drafting is its biggest feature; not only tells how to make the pattern, but how to develop it with modern machines and tools; gives valuable assistance on soldering, brazing, welding, crimping, beading, straight, circular and irregular cutting. Bound in leatherette; 600 pages; more than 400 pen drawings and illustrations. Price**\$2.00**



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NOTE

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January 9, 1928

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Massillon, Ohio.
Gentlemen:

I have one of your cast iron furnaces which has been in use since 1888 and is good yet all excepting the water pan which is rusty and I wish you would send me a new water pan.

Yours truly,
(Signed) Charles D. Eliot,
317 Third Avenue North,
Great Falls, Montana.

**We invite any manufacturer of
furnaces to show a better record.**

The HESS-SNYDER COMPANY
MASSILLON, OHIO

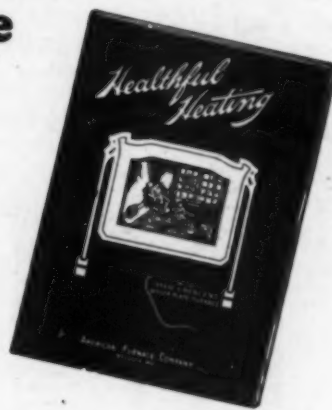
Makers of BOOMER FURNACES for Forty-Three Years

Testimonials from Every Part of the Country **in the New 1928 "AFCO" Catalogue**

There are pictures of homes both large and small and letters from the owners giving their opinions of the "AFCO" Furnace. Incidentally, they give full credit to the reliable dealers who installed them.

It is the kind of recommendations that build business for the "AFCO" dealer. You want this kind of business and you can get it by installing "AFCO" Boiler Plate Furnaces according to the standard code. The "1928" AFco Catalogue gives the facts.

Send for a copy of this new book—ask for it on the handy coupon.



American Furnace Co.

2719-31 Morgan St.

St. Louis

Missouri

AMERICAN FURNACE CO.

St. Louis, Mo.

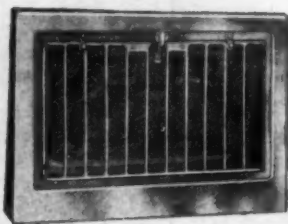
Please send me a copy of your new 1928 Catalogue (without obligation).

Name

Street

City and State

Greater Capacity, Smaller Size



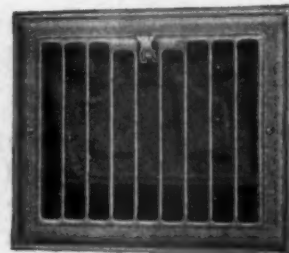
**No. 170 Series—Size 8x12
Baseboard Register**

Two-piece. Unusual capacity. Justifies Use of Smaller Sizes.

THE Baseboard Register shown at the left is, to the best of our knowledge, the *only* baseboard register size 8x12 which has sufficient capacity for a 10-inch round pipe. It has a free face area of 81 square inches (3 inches in excess of pipe area) and is made for first floor use with projections of 2-1/4 and 3-1/4 inches at the base.

The No. 390 Sidewall register at the right matches the No. 170 line in design and capacity.

Many installers are saving real money by using the smaller registers permitted by this unusual capacity.



**No. 390—Size 8x10
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Manufacturers of Registers, Wrought Grilles and Radiator Enclosures

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(WESTERN WAREHOUSE AT CHICAGO)

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**WROUGHT
STEEL**



**WARM AIR
REGISTERS**

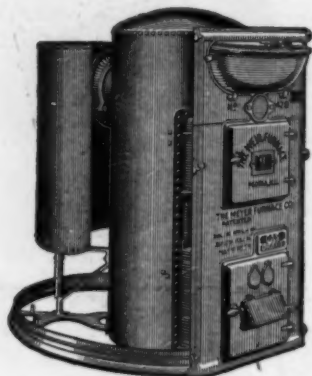
"The Air Capacity Line"

"COMPLETE SERVICE" CLAIMED AND PROVED

Hundreds of dealers now know this to be a fact

No longer is it necessary for them to look to other sources for any part of their furnace or supply needs.

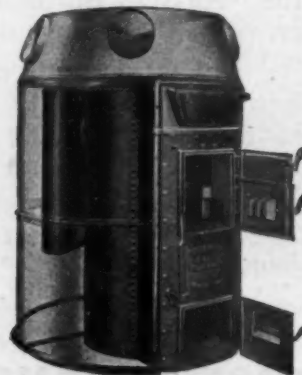
1928 finds our facilities greatly improved and even better service may be expected by our friends who already know that "Standard Service" is Different and Better.



Weir Steel Furnace



Nesbit Cast Iron Furnace

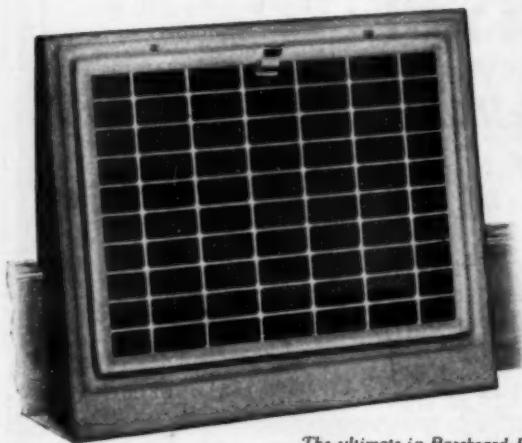


Stan-Co Steel Furnace

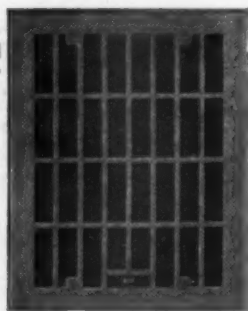
STANDARD FURNACE & SUPPLY COMPANY

Manufacturers and Distributors

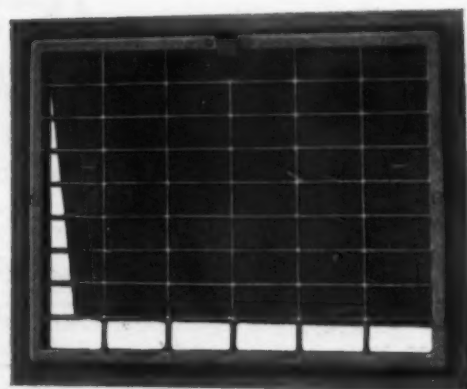
OMAHA, NEBRASKA



The ultimate in Baseboard Registers, Style 902. A two-piece register with new Positive Center Movement



Style 80 Floor Register, of the famous "Cobble" line. Tiny cobbles over face prevent foot-slipping, preserve finish.



Style 402 Baseboard Register—Same as style 902 in every detail except that this is a one-piece register

AN "OLD TIMER" TALKS ON T&B

THROUGHOUT the warm air trade there exists a high degree of confidence in T & B Super-Regs. Jobbers, dealers and furnace men frequently express their unstinted faith in the offerings of this House. A letter from Mr. Frank E. Hess, of the Hess-Snyder Company, manufacturers of Boomer Furnaces and Stoves, at Massillon, Ohio, is a specific illustration. He says: "From 1890 to 1908, while I was traveling, I sold nothing but T & B Registers. The house I was born in and lived in until 1885 was arranged for two families about 1902 and we used T & B Registers. My father's home had T & B Registers put in in 1885. Four sisters, my brother and myself, two sons and one daughter—three generations using T & B Registers. My oldest son is the only one not

using them and if I could stick a register on his steam plant I would have him in the list also."

This House has kept a steady pace in register improvement. New mechanical principles, artistic designs that at the same time insure maximum air capacity; sizes to fit all standard stackheads made; and the development of register finishes that meet the present day demands of appearance—these factors have earned the appreciation of the entire industry. The T & B line of Super-Regs extends unlimited advantages to anyone affiliated with warm air heating. Mail coupon for literature.

TUTTLE & BAILEY MFG. CO.

Established 1846

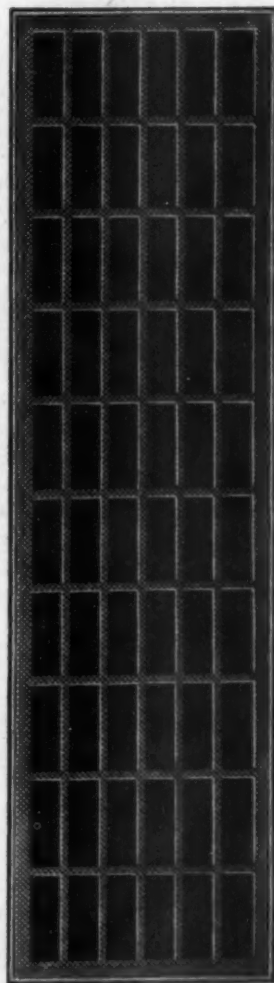
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TUTTLE & BAILEY SUPER-REGS

A line of registers unquestionably superior in

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|-----------------|-------------------|
| 1. Construction | 4. Appearance |
| 2. Capacity | 5. Movement |
| 3. Design | 6. Practicability |



Extremely Popular—Style C "Cobble" Cold Air Face. This face is cast, the explanation of its ruggedness. No other single item has ever won a greater acceptance in the warm air industry.

TUTTLE & BAILEY MFG. Co. AA 2-25-28
441 Lexington Ave., N. Y. City

Please send details of latest offerings in T & B Super-Regs.

Name

Address

Founded 1880

Published to Promote
Better
Warm Air Heating
and
Sheet Metal Work

American Artisan

and Hardware Record

Sheet Metal Work-Warm Air Heating

Yearly Subscription
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Vol. 95, No. 8

CHICAGO, FEBRUARY 25, 1928

\$2.00 Per Year

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HAS READ ARTISAN 43 YEARS

Edgar, Nebraska, February 22, 1928.

AMERICAN ARTISAN,

I am in receipt of your reminder to me advising me that my subscription to the AMERICAN ARTISAN expires this month (February). I will, therefore, request of you to please discontinue AMERICAN ARTISAN to my address.

My only reason for asking this is: Old age compelled me to retire from active work in sheet metal and furnace line. I sold out several years ago, yet I have kept up my subscription to AMERICAN ARTISAN since then more from force of habit than necessity.

I have been reading AMERICAN ARTISAN since 1885; in fact, before that time if my memory is correct, and can assure you I have received a great deal of benefit from it, far more than the cost of the magazine to me.

In conclusion, I want to thank you for all past favors, which I can assure you were always appreciated by me.

With my kindest and best wishes to you and your office force, I extend to you all a long distance hand shake and good-bye.

G. A. BYOR.



XXth CENTURY Is a Desirable Line

1. DEALER ADVERTISING (supplied free) to interest prospects in your community on XXth Century products. This includes an excellent series of newspaper advertisements, folders, broadsides and letters ready to mail to architects, contractors, real estate men and immediate prospects.
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From every angle, XXth Century is a desirable and profitable line. And the beauty of it is—you can concentrate on this complete line—make all your purchases in one place—and make longer and greater profits.

Write for the XXth Century
proposition today.

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"Manufacturers of fine furnaces for 34 years"

THE XXth CENTURY H. & V. CO.
AKRON, OHIO.

Without obligation, please give me the complete
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Address.....

A.A. 2-25-28

Running Hot and Cool Air!

A Message to Furnace Manufacturers, their Salesmen and Dealers

*Tells how you may open new markets and
find new customers*

IN ORDER to let the public know about it and thus to create a still greater natural volume demand for the Miles Automatic Furnace Fan, we have contracted with The Curtis Publishing Company for a series of full column spaces in The Saturday Evening Post.

The story of "Running Hot and Cool Air" and how it banishes that "Frigid Zone" from the home will be interestingly and graphically told. You will see at once that every prospect we create must first of all be a furnace prospect.

The first of this series of advertisements will appear in the Saturday Evening Post March, 17th.

What This Means to You

All inquiries received by us direct will be turned over to the dealers, in

the territory from which the inquiries come, who handle furnaces made by the manufacturers who have joined us in our "co-operativesales" program, or dealers who have a complete demonstrating unit on their floor.

92 furnace manufacturers and their dealers are now benefiting by our sales co-operation.

All furnace manufacturers have already been advised just what this program is, but, in case you have mislaid our letters on the subject, write us to that effect and we will tell you all about it.

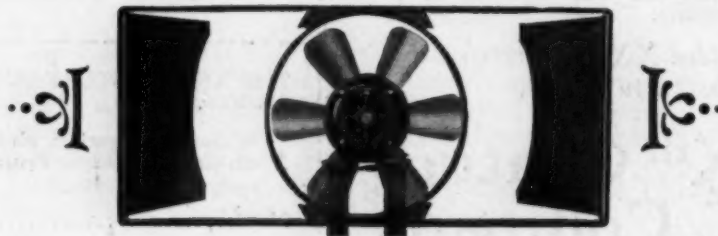
Most of the RADIATOR sales field is now open to the furnace man and the first ones to take advantage of this fact become the pioneers and reap the profits of pioneers.

Live inquiries develop new furnace sales.

THE WARM AIR FURNACE FAN COMPANY

6521 CEDAR AVENUE
CLEVELAND, OHIO

Note: "Forced Air Heating Data"—hand-bound—containing the most comprehensive data on "Forced Air Heating" is now available to dealers at \$4.00 per copy including your name in gold on the cover. This price includes supplementary monthly bulletins "Fan Facts" for the purpose of keeping your "Forced Air Data" fresh and up-to-date. Remit cash with order.



Miles Automatic Furnace Fan with
patented by-pass louvers



American Artisan and Hardware Record



Vol. 95

CHICAGO, FEBRUARY 25, 1928

No. 8

New Building and Repairs for 1928 Will Equal \$10,000,000,000

*Survey by Copper & Brass Research
Discusses Value of All Construction*

BUILDINGS in the United States today have a total value of \$180,370,000,000, according to statistics just compiled by the Copper and Brass Research Association in its annual survey of the building industry.

Construction in 1928 will total almost \$10,000,000,000, according to the association. This estimate includes new building and repairs and maintenance of existing structures. Expenditures in 1927 on the same basis approximated \$9,775,000,000.

The survey discusses in detail the value of all construction, appreciation in worth of buildings, distribution of buildings by classes, building in 1927 and 1928, and geographical distribution. Under these headings the Association says:

Value of All Construction

"In considering the value of all classes of existing buildings and attempting to derive figures which are even approximately correct the most baffling problems are those of depreciation, appreciation, and repairs and maintenance.

"Last year's survey set the value of all types of construction at \$175,414,000,000 on January 1, 1927. Starting with this figure, we can estimate as follows:

	Billions of Dollars
Value of all types, January 1, 1927	175.41
Add new construction in 1927.....	5.73

Less a fire and storm
loss of62

Leaving a net increase
of 5.11

This gives a total of. 180.52
Depreciation during the year
is determined as follows:

100.2 billions (56.1
per cent of the total
of 175.4) of residential
construction has a
probable useful
life of 30 years.
The annual rate of
depreciation is $3\frac{1}{3}$
per cent, and the
money value is.. 3.34

75.2 billions of other
construction is estimated
at 40 years with an annual
depreciation rate of $2\frac{1}{2}$ per
cent, or in dollars. 1.88

To this add depreciation
on the net new construction
in 1927, which has an
average rate of 2.61 per cent;
in dollars this is.. .07

The total depreciation
charge is then..... 5.29

Leaving a net worth of.. 175.23
To this amount must be
added the appreciation
value of buildings and the
amount spent for repairs

and maintenance. The
former figure, as explained
below, is probably more than..... 1.09
Repairs and maintenance
(using last year's figures)
cost..... 4.05

The grand total is....\$180.37
This is an increase during 1927
of 4.96 billions, or 2.83 per cent.
During the same period the population
increase is variously computed
as from 1.18 per cent to 1.91 per
cent.

Appreciation in Worth of Buildings

"Appreciation in buildings must
necessarily be predicated on the resale
value.

"The resale value of residential
construction is well established as
considerably in advance of the first
cost. Various factors determine
this. Chief among them are attractive
appearance, location, design
and materials of construction.

"In other types of building
appreciation is almost negligible
because

1. Land values largely control
exchanges of real property in this
class.

2. The income from the use to
which the building is put is a controlling
factor. A theater, for instance,
increases in value in direct
ratio to the amount of patronage it
can command. So also with stores,
etc.

3. Eleemosynary, recreational,
educational and institutional buildings
(representing over 17 per cent

of the total) have not resale value.

4. Commercial and industrial buildings (and particularly the latter) have relatively small resale value because of the constant changes and improvements in the arts of business and manufacturing.

5. Commercial and industrial buildings have small marketability. They represent capital investment rather than capital turnover.

"The National Industrial Conference Board gives 213 as the index for weekly wages and 164 for cost of living for November, 1927, based on 1914 figures. Accordingly, 23c of every dollar earned represents income above bare necessities which can be applied to the luxuries of life. It is difficult to estimate how much of this goes to the improvement of living conditions, but, as this is almost a primordial urge, at least 25 per cent may be used in the purposes of this computation.

"On this assumption at present the average home buyer gladly increases his outgo 5.75 per cent for improved living conditions. This may be safely used as the measure of appreciation.

"To how much of the total of 180 billions can this percentage be applied?

"In general, houses over 10 years old can be placed in the obsolete class. This bars all construction prior to 1917 and, as during the next four years the industry was in chaotic condition, we can base calculations on 1922 and later years.

"The total value of construction for the last six years is \$34,226,000,000, of which about 55 per cent, or \$19,000,000,000, represents residential construction.

"Applying to this our figure of 5.75 per cent, we get \$1,092,000,000 as the appreciation in resale value of residential construction during 1927. That is to say, purchasers of homes can afford to pay that much more than the first cost of these structures.

Distribution of Building by Classes

"Careful analyses of seven different authorities give the following percentages for various classes of

buildings. They represent as true a picture of such classification as can be prepared:

Class	%	Amount
Commercial.	16.2	\$ 29,220,000,000
Hospitals ..	2.9	5,230,000,000
Hotels	5.1	9,200,000,000
Housings ..	51.1	92,170,000,000
Industrial...	6.8	12,260,000,000
Public	2.9	5,230,000,000
Recreational	5.4	9,740,000,000
Religious ..	2.7	4,870,000,000
Schools	6.9	12,450,000,000
Totals ...	100.0	\$180,370,000,000

The Michigan Sheet Metal and Roofing Contractors' Association will hold its annual convention at the Hotel Burdick, Kalamazoo, Michigan, from March 5 to 8. These Michigan boys are noted for their ability to accomplish things for the good of their industry, and their conventions are always a grand success both from a business and social standpoint.

AMERICAN ARTISAN will have two representatives present at this convention, and a complete report of the activities and accomplishments of this association will appear in the March tenth issue of AMERICAN ARTISAN. If it is at all possible for you to get to Kalamazoo while this convention is on, by all means do so. Whether you do or not, read the report that will appear in the issue of AMERICAN ARTISAN for March 10th.

Building in 1927

"The volume of new construction in 1927 exceeded the forecast of January, 1927, by almost \$1,000,000,000, according to the findings of various authorities, like F. W. Dodge Corporation, *Architectural Forum*, *Building Age*, etc. Total construction in the United States in 1927 was:

Class	Amount
Commercial	\$ 928,000,000
Hospitals	166,000,000
Hotels	180,000,000

Housings	3,040,000,000
Industrial	389,000,000
Public	165,000,000
Recreational	309,000,000
Religious	155,000,000
Schools	394,000,000

Total\$5,726,000,000

"To this amount must be added a repair and maintenance expenditure of \$4,049,000,000, bringing the total for 1927 to \$9,775,000,000.

Building in 1928

"For the coming year the following is an estimate of the money to be expended:

For new construction—housings ...	\$2,380,000,000
For new construction—other	2,600,000,000
Fire and storm losses	590,000,000
Repair and maintenance	4,120,000,000

Total\$9,690,000,000

"It is apparent that, so long as the financial condition of the country remains favorable, there must be spent yearly a sum approximating \$10,000,000,000. Population increases about 1,600,000 per annum. With five persons to the house, more than 300,000 houses must be constructed to provide shelter for the newcomers. The amount set forth above is little enough for this huge number.

"Revised estimates show, for the past year, a slight increase in the ratio of dollars spent on housings to dollars spent on other classes.

"An increasing sum will be spent yearly for repairs and maintenance. An average of 2.6 per cent of the total worth is probably an underestimate; yet it amounts to over \$4,000,000,000 per year.

"The total expenditure can be proportioned as follows:

Classes of Buildings for 1928
(Including New Construction and Repairs)

Class	Millions of Dollars		
	New	Repairs	Total
Commercial ..	960	570	1,530
Hospitals ...	170	240	410
Housing (including hotels)	2,380	1,980	4,360

Industrial ...	410	360	770
Public	170	100	270
Recreational .	320	280	600
Religious ...	160	90	250
Schools	410	500	910

Totals	4,980	4,120	9,100
Fire and storm loss.....			590

Grand total\$9,690,000,000

"It is interesting to note that two classes—namely, hospitals (including institutional buildings) and

schools (including libraries, etc.) will require more for repairs to and maintenance of existing structures than will be spent for new construction.

Geographical Distribution

"Analyses of estimates of geographical distribution from three sources show but slight changes in the figures given in last year's survey. Applying these new percentages to the estimates for 1928 gives the following results:"

District	%	Millions of Dollars		
		New	Repair	Total
1. New England States.....	6.4	340	260	600
2. New York and New Jersey.....	26.1	1,450	1,090	2,540
3. Eastern Pennsylvania, Delaware, Virginia, District of Columbia..	10.2	560	420	980
4. North Carolina, South Carolina, Georgia, Florida, Tennessee, Alabama, Mississippi, Arkansas, Louisiana, Oklahoma.....	10.8	600	440	1,040
5. Western Pennsylvania, Ohio, West Virginia, Kentucky.....	10.9	670	450	1,120
6. Michigan, Indiana, Illinois, Wisconsin, Iowa, Missouri, Nebraska, Kansas	23.7	1,320	980	2,300
7. Minnesota, North Dakota, South Dakota	1.5	80	60	140
8. Montana, Idaho, Wyoming.....	0.3	10	10	20
9. Colorado, Arizona, Utah, New Mexico, Nevada	1.1	50	40	90
10. Texas	3.4	190	140	330
11. Pacific Coast States.....	5.6	300	230	530
Totals	100.0	5,570	4,120	9,690

Fort Wayne, Indiana, Furnace and Sheet Metal Men Hold Annual Meeting

J. W. Loney Elected President for Third Successive Term—11 New Members Taken In

THE Ft. Wayne, Indiana, Furnace and Sheet Metal Contractors' Association held its annual meeting last week, with a good attendance of members and their ladies. Luncheon was served after the business session and several deals of bridge and eucere were played, with a final finish at dancing lasting until a very late hour.

Officers elected for the coming year are as follows: President, J. W. Loney, elected for the third consecutive term; Vice President, William C. Huguenard; Secretary, Charles E. Tharp, elected for the third consecutive term; Treasurer, Edward D. Albright. Hold-over

trustee for one year, C. C. Seib. Hold-over trustee for two years, William H. Carter. Carl V. Miller was elected as a trustee for three years.

The treasurer's report showed the association to be in a good financial standing.

The secretary's report showed there had been 11 members admitted during the last year, and a loss for various causes of four. The association has labored unceasingly without result during the past year in an effort to get the city to appoint a Furnace and Sheet Metal Inspector. A renewed effort in the way of an ordinance will be presented

to the City Council at its next meeting which it is confident will pass, that will create the inspector wanted, without it passing the board which held the red block against the association during the past year.

A report was also made by various ones who attended the state meeting recently held at Indianapolis and indicated all who attended are already making plans to be there next year.

It is planned in the near future to broadcast over a local radio station a series of talks designed to educate the public in the advantages to be had by using the principals of the National Standard Code for warm air heating, even the correcting of faulty furnaces now in use.

Excerpts from the Remarks of President Loney

In this, the close of another year of our association, I want to take this opportunity to express my most heartfelt thanks to all the members for their great help and assistance in the conduct of the business of this association.

Referring to committees, I wish to thank the members of the two who had charge of the entertainment and banquets in December and January.

I would suggest to the incoming Membership Committee to make it their goal for the coming year to have this association the representative of every sheet metal contractor and furnace dealer in Fort Wayne and all towns in close proximity to Fort Wayne.

Starting this new year, why not let us boost for better and more warm air heating, better and more good sheet metal work, and let every member at every opportunity that presents itself talk better heating and better sheet metal work, install heating plants in accordance with the Heating Code.

In conclusion I again want to thank all the members for their great help in the conducting of the business of the association, and with best wishes for a very prosperous year, and that that is best in friendship.

Thorough Knowledge of Climatic Conditions Necessary in Farm Ventilation

Cold Climates Require Better Systems for Health of Animals

By PROFESSOR A. J. MACK*

THIS is the eighth and concluding article of the series on Farm Ventilation.

In this series of articles the needs of ventilation for the various classes of farm buildings has been stressed. Methods of ventilating the various types of buildings have been suggested and the air requirements for the various classes of buildings have been discussed in a general way.

The exact design of a system for any particular type of building has been avoided as too many variables exist. Each individual case is a problem in itself. The climatic conditions, location with reference to other buildings, size, shape and type of construction all have their effect upon the design.

Much work has been done by the various experiment stations, including the U. S. D. A., in determining the optimum conditions for almost all classes of farm ventilation. The committee on Farm Ventilation of the American Society of Agricultural Engineers also has been very active in gathering information concerning optimum conditions to be maintained. There is still some difference of opinion, but in the main the opinions regarding optimum conditions do not vary greatly.

The designer of a ventilating system for farm buildings has only made a good start when he has decided upon the conditions most desirable. A thorough knowledge of climatic conditions is very important to the successful designer. His files should contain maps of climatic farm building zones, temperature zones and rainfall zones.

*This is the eighth and concluding article of the series on Farm Ventilation by Professor A. J. Mack, Department of Mechanical Engineering, Kansas State Agricultural College, Manhattan, Kansas.

These appear from time to time in the transactions of the American Society of Agricultural Engineers, and are to be found in some of the bulletins from the U. S. D. A. He should also have in his files the various bulletins from the different experiment stations of the continent relating to storage and to the housing of farm animals. These bulletins contain valuable information concerning the most satisfactory conditions in the territory surrounding the individual stations.

In the storage of farm products the most satisfactory system of ventilation is the one which gives the best returns commensurate with the cost of the installation.

In the housing of farm animals the health of the animals is of primary importance in the design of a ventilating system. After the health of the animals has been considered the economic features must be taken into account. The installation of an expensive or even extensive system may not be warranted in many cases. The extra eggs, the extra quarts of milk, or pounds of flesh realized as a result of such installations may not be sufficient to offset the extra costs of the equipment. In the very cold climate the better systems are very much more necessary for the health of the animals. The better, more expensive systems are also justified where the scale of operations is very extensive and the net returns are proportionately larger.

Coöperation by those to be benefited in building construction is a very desirable thing. In Manhattan, Kansas, the home of the Kansas State Agricultural College, a school is being sponsored coöperatively by the Riley County Lumbermen's Association, the Riley County Farm Bureau, the local

chapter of the Carpenters' Union, and by the Kansas State Agricultural College, and it is in its second year. The object of the school is to familiarize carpenters, lumber dealers, all mechanics connected with the building trade and the farmers with recommended practices in the planning and construction of farm buildings. It is being done to secure coöperation in the building of standard buildings that will be the most profitable for the money invested.

Similar projects are being carried on all over the state and in the two years since starting the number of builders' schools has grown from 14 to over 40. No doubt such schools are conducted in other states also.

It would seem that these schools would warrant active coöperation by the sheet metal workers and ventilating engineers. It would be a good place to sell the idea of ventilation to the mutual benefit of all concerned.

The agricultural engineer is placed in an excellent position for taking a very active part in farm ventilation by his knowledge of farming equipment as a whole and would be a very valuable asset to ventilating engineering firms specializing in farm ventilation on a large scale.

In concluding this series of articles a summing up the various suggestions made would be in order. In the storage of potatoes temperatures of 33 degrees to 36 degrees Fahrenheit or even as high as 40 degrees Fahrenheit are generally considered proper. The freezing point of the potato is around 27 degrees Fahrenheit. Light should be excluded from potatoes stored for food. Investigators claim modified light, however, is not in-

jurious to seed potatoes kept stored in a cool place. In the storage of fruits and vegetables proper aeration and humidity control is of great importance. This is the function of the ventilating system. A relative humidity of 85 per cent with the above temperatures, as suggested by experimenters, will result in minimum losses due to either sweating or withering.

In general the rules for storage of potatoes will also apply to apple storage.

Temperatures in cellar storage are largely controlled by the ground temperatures, but may be somewhat affected by proper opening and closing of the doors and ventilating systems. Care must, of course, be used to prevent freezing at or near openings of ventilators as well as doors.

In designing a ventilating system for the housing of farm animals certain basic information is desirable. Such as the amounts of air breathed by the various animals and the most satisfactory amounts of air to be supplied per animal for ventilating purposes. Using a U. S. D. A. Bulletin for authority, a horse will breath 142 cubic feet of air per hour; a cow, 116 cubic feet; a pig, 46 cubic feet, and a sheep, 30 cubic feet. For ventilating purposes an amount of air equal to one-half the breathing rate per hour should be provided each minute. Thus for a cow breathing 116 cubic feet of air per hour, 58 cubic feet of air per minute should be allowed for ventilation. This rule is only approximate, as with the ventilating systems used the exact amount can in no way be provided, also the breathing rate varies somewhat. This rule applies also to chickens breathing 1.2 cubic feet of air per hour.

Intelligent control of ventilating apparatus is, of course, imperative for the most satisfactory results. Only in such a way can temperatures and humidity be controlled. It would be folly to keep the intakes open to such an extent that temperatures would become too low. It would also be unwise to have regulation such that moisture

would condense and collect on the walls and ceiling of the structure.

No set rules can be given for determining the sizes of the intakes and the out-takes of ventilating systems as they are influenced in too many ways. The temperature difference, construction, and height of the structures all have their effects. This results in certain systems being favored in some sections of the country while others are favored in other sections. This is notably true in regard to the King and Rutherford systems as employed in dairy barn ventilation. In the very cold climates probably the Rutherford system is more favored, and in the more temperate

and advantages of ventilating equipment for the farm. No attempt has been made to give any one system of ventilation preference over any other. The plan has been chiefly to sell the idea of ventilation to those who are interested either in installing or having it installed. The game should be played fairly and the merits of each case carefully investigated from all angles, including health and economic benefits to be derived.

Chicago Solder Company Doubling Plant Capacity

The business of the Chicago Solder Company, 4201 Wrightwood



Fire Destroys Shop of Arrowhead Sheet Metal Company, 315 Fourth Avenue, International Falls, Minnesota. B. J. Malerich, the Proprietor, Says that One of the First Things He Reordered Was a One-Half Inch Electric Drill

climates the King system has the preference.

One general rule can, however, always be applied with all ventilating systems. That is, strong drafts are to be avoided. They are detrimental to health and have other undesirable features such as causing condensation and uneven distribution of air currents. The maximum air travel should not exceed 300 degree feet per minute.

This concludes the series of articles on farm ventilation. In preparing the articles the idea has been to point out the possibilities

Avenue, has grown to such extent, according to an announcement issued by the company, that it has been necessary for it to double its plant capacity. Its new unit has just been completed. This company manufactures Kester self-fluxing wire solder. Its line is a comprehensive one, embracing a flux core solder for every purpose and a package for every class of user. This company is now embarked on what is said to be the largest advertising campaign ever undertaken in connection with the marketing of solder.

Reviewing Assembling Details and the Application of Simple Rules

By O. W. KOTHE, Principal
St. Louis Technical Institute

TO THE younger generation of workmen general methods of assembling and ideas of application are often of more interest than a display of patterns. Lately one of our friends, Mr. Madely of Montreal, Canada, sent the accompanying drawing which we believe is of interest to some of our readers. Many workmen always seek to find a reason for imperfect jobs or where the metal does not lay up as it should and knowing the reason they seek to remedy the solution. Nearly every mechanic does this in one way or another and it is always interesting to exchange ideas. So in the first diagram we have a stake on which a cylindrical vessel is double seamed.

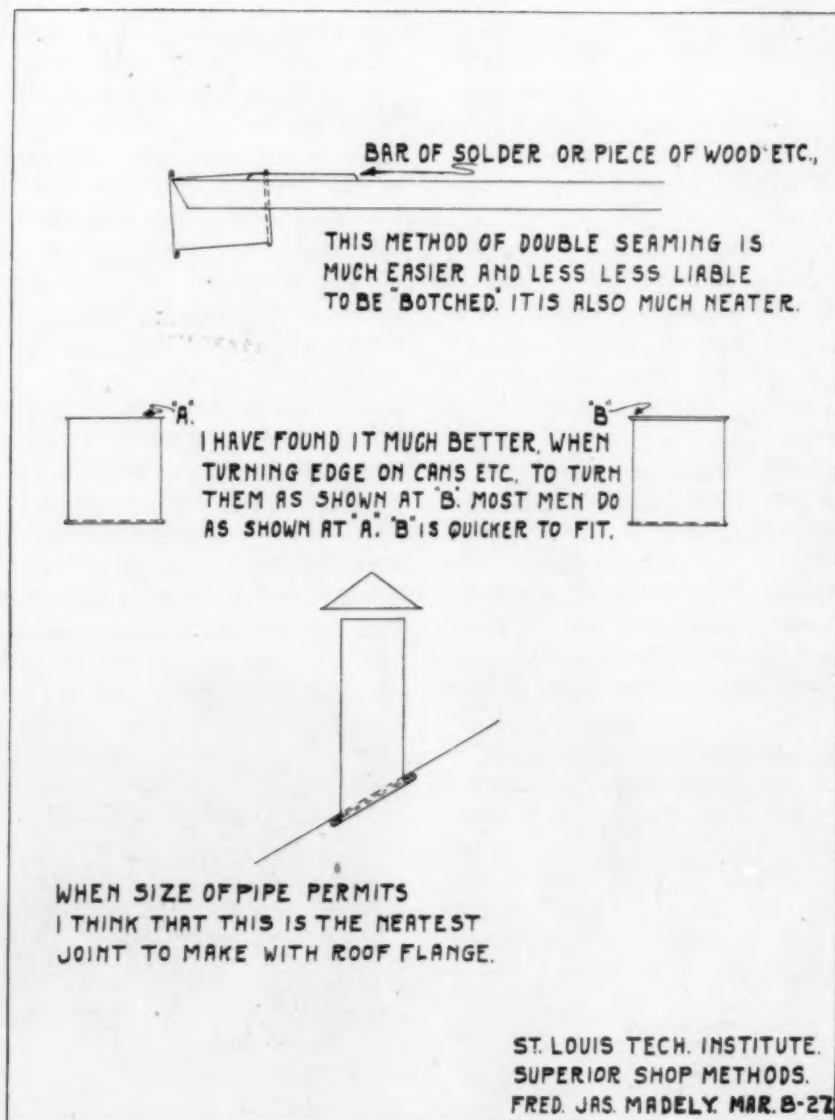
I am sure many workmen have observed that by slightly tilting the vessel the seam can be closed down tighter than when the vessel lays down level with the stake. This is due to the slight addition to which the metal can be bent and so closes in more readily and it also makes the edge of the stake hug in the crease of the bottom more closely. With usage a stake becomes bruised on the ends and is more or less thick so that any slight turn causes the double seam to become disfigured or at least the metal around it. So

it is always well to try and keep the edge of the stake smooth and sharp and not use it for riveting or cutting wire or nails or other things carelessly. Much can be learned by careful observance, while little seaming and making slight experiments and in adjusting the work to see which works out the best.

Another thing that is of interest is the turning of an edge in making a vessel ready to receive the bottom. Many workmen like to turn large wide edges and they try to have the machine crowd the metal into a straight position as is shown in "A." This is not always a good method, because on wide edges a considerable stretch of metal must be expanded in order to allow for the increased circumference along the edge and because the metal is not

always of uniform softness, being brittle in places it will break, and a person more often makes horse collars and things like that than a perfectly round vessel.

Small edges of $\frac{1}{8}$ -inch width or so are much more easily made and they are much better for assembling. Such edges hold all that is expected of them and make a neater job as well as requires less worry for the workman to turn them over. Large wide edges used on vessels for double seaming, must naturally be stretched and then later when the hammering over process is carried on, this same metal must be again compressed or shrunk. This is what most men do not consider in trying to compress the edges against the metal buckles and will not lay up smoothly, causing more hammer



Patterns for Double Elbow

blows and worry in making a decent looking job. When wide edges are necessary it is much better to turn them on a thick edge to an angle, as at "B," and then bring them over the rest of the way on a stake with a mallet. This will stretch the edge of the metal rather than tearing it apart as is the case in a machine. However in making small edges it is optional whether you turn them as at "A" or "B" just so too much pressure is not put on the machines in forcing the metal. Often it is advisable to make them flaring, as at "B," and then with a mallet tap them down level.

Making of roof jacks is still a part of many workmen's jobs. These are used for smoke pipes as well as ventilating pipes. When used for smoke pipe work it is a general practice to make the stem tapering so the stove pipe can be shoved up into the taper pipe and bind there, which makes a more secure joint than straight. However, if both roof jack and pipe are made of the same size, no objection is made on that score. Where hoods are placed over such smoke pipes the hood should be raised above the pipe at least $\frac{1}{2}$ the diameter of the pipe and in some cases three-fourths to a full diameter, especially where cheap soft coal is used. Some coal has a way of giving off considerable soot and this clings to the pipe walls as well as any obstruction and soon fills up the openings, especially if the draft of the chimney is poor.

One of the best ways of assembling these roof jacks to flanges is by double seaming them as our sketch shows. The soldering can be done either on the inside or the outside, so that if the soot does burn out, enough solder is generally melted in the seam to prevent leakage later on. Some workmen merely plant the pipe on a flange and solder it in place, which is somewhat quicker but is not a good practice since when the chimney burns out the solder will melt and it can give possibilities of setting the building on fire, which, of course, is to be avoided at all costs.

Grand Rapids Sheet Metal and Heating Engineers Hold Mid-Winter Banquet

The mid-winter banquet of the Grand Rapids Sheet Metal and Heating Engineers was held in the banquet hall of the Association of Commerce, Tuesday evening, February 7th, about 75 being present, including the ladies.

Lee Bierce, Secretary of the Grand Rapids Association of Commerce, made an interesting talk on the civic duty we owe the community in which we live.

City Attorney Ganson Taggart followed with an address on "Government." It was interesting, and at its conclusion Mr. Taggart was given a rising vote of appreciation. Remarks were also made by W. C. Hopson and Wayne Young. Harry Rhodes acted as toastmaster.

President Dyksterhuis said this banquet was a peace offering to the ladies so that they will allow their husbands and sweethearts to attend the coming state convention without arguing. Music was furnished by a 20-piece boys' orchestra.

"Nick" Kennedy Addresses Detroit Heating Men's Meeting

An interesting meeting of the Detroit Warm Air Heating Contractors was held at the Imperial Hotel, on Wednesday evening, February 8th. As usual, a splendid dinner preceded the meeting. Following a short recess, the meeting was called to order by the newly-elected President, J. L. Fuller. In Mr. Fuller's opening remarks, he outlined the general program for the ensuing year. He stated, however, that before proceeding with Standard Code legislation or other activities further organization work would be done, so that when these projects were started they would be more certain of success.

The first speaker of the evening was State Secretary F. E. Ederle, who gave an outline of the program for the coming state convention. Following Mr. Ederle's remarks, President Fuller appointed H. E. Doherty to look after convention

arrangements for Detroit members. Fred Bishop was introduced and he gave an interesting talk and black-board demonstration of Standard Code factors. Fred surely has made a study of the Standard Code and the information he broadcasted at this meeting was worth while.

The main speaker of the evening was none other than good old N. J. Kennedy, of the J. J. Davis Company. Nick, as most folks know him, has lost none of his enthusiasm or convincing ability since practically retiring from the speaking platform. His subject, "The Value of Organization," gave him a wide opportunity to explain the benefits of collective effort.

The attendance at this meeting was encouraging and it is now certain that this association is soon going to become a real factor in the warm air heating industry of Detroit and its environs.

F. O. Carfer Appointed Metal Sales Manager Republic Metalware Co.

Francis O. Carfer has been appointed metal sales manager for the Republic Metalware Company, Buffalo, New York, according to George R. Le Sauvage, President.

Mr. Carfer started in the sheet metal line some seventeen years ago. As the representative of the Tiffin Art Metal Company he covered Ohio, Indiana and Michigan for several years. He then served as sales manager for the Kanneberg Roofing and Ceiling Company of Canton, Ohio.

His next connection was with the J. M. & L. A. Osborn Company, Cleveland, whom he served first as representative in Ohio and Pennsylvania, and more recently as manager of their Buffalo branch.

Last year he joined the staff of The Republic Metalware Company. On the sudden death last month of Mr. Hopkins, who had served so faithfully as metal sales manager, it was decided that Mr. Carfer should be given the post thus unexpectedly vacated.

In his new position Mr. Carfer's wide experience will be very valuable.

Kalamazoo All Set to Entertain Michigan Sheet Metal Men

Standard Code, Proper Bookkeeping and Cost Accounting Methods to Be Features

PLANS are practically completed for the 17th annual convention of the Michigan Sheet Metal and Roofing Contractors' Association to be held in the Hotel Burdick, Kalamazoo, Michigan, March 5, 6, 7 and 8, 1928.

The program of events will be carried out somewhat as follows:

Monday, March 5

Monday, March 5th, will be given over entirely to meeting of the Board of Directors, Trade Extension Board and the various committees.

Tuesday, March 6

On Tuesday, the registration will be opened at 9:00 a. m. At 10:30, the convention proper will be opened by a song, after which general remarks will be given by H. F. Brundage. The welcoming address by Mayor Balch will follow. President Rhodes will give the response, and the convention will be officially under way.

The afternoon session will be devoted entirely to warm air heating subjects. The first speaker will be F. R. Bishop of the Michigan Stove Company; his subject will be "Explanation of the Standard Code Factors." Mr. Bishop has made an extended study of the Code.

R. W. Menk, Robinson Furnace Company, the next speaker, has for his subject, "The Purpose of Boosters on Warm Air Installations." Mr. Menk will have with him a complete unit of this much needed appliance, and will give a practical demonstration.

The final speaker on the program will be A. E. Jones, Engineer, Gas Division, L. J. Mueller Furnace Company. "Gas Heating, the Sheet Metal Dealer's Opportunity," furnishes the subject for this address. Mr. Jones has had many years' experience in the gas heating field and is well prepared to discuss this subject. Many of the leaders of the warm air heating industry predict

a bright future for this type of heating. Every up-to-the-minute heating contractor should become more familiar with the possibilities and the practicability of this form of heating.

Kalamazoo Local Will Entertain

On Tuesday evening the Kalamazoo Local Association will give a dinner and entertainment in the Ball Room of the Burdick Hotel. High-class entertainment has been engaged and a general good time is assured.

Wednesday, March 7

Wednesday morning at 9:00 o'clock the annual meeting of the Travelers' Auxiliary will be held. This may seem a little early to some of our traveling friends, but I am sure that they can and should get up a little early at least one morning during the convention.

The regular Wednesday morning session will start at 10:00 o'clock, and the first speaker will be our enthusiastic booster, Bill Busch. In addition to showing moving pictures which Bill took last summer, he will have many things to say of considerable interest to sheet metal and roofing contractors.

The next speaker, A. B. Lewless, Chairman of the Specifications Committee, will give a short talk and explanation of the work of his committee.

Shannon G. Lees, Division Engineer, Barber Asphalt Company, will conclude the program with an address on asphalt roofing.

The afternoon session will be opened by the writer of this article, Frank Ederle, who will attempt to explain the results of the standardization of the sheet metal, roofing and heating industries.

Harold B. Allen, Vice-President, First National Bank and Trust Company, Kalamazoo, will speak on "The Value of Proper Bookkeeping Methods to Any Business

Man," particularly to sheet metal.

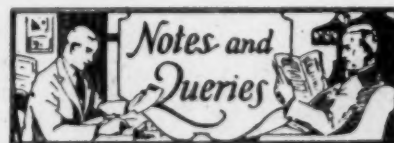
The remainder of this session will be given over to a blackboard demonstration of bookkeeping, cost accounting and overhead distribution, by Messrs. Payne, Berkey, Rice and Laux, Lawrence Scudder & Company, Accountants and Auditors. This demonstration and discussion should prove the real meat of the convention. For some time these men have been gathering information from members' records and will have some interesting data.

Travelers' Auxiliary Banquet

On Wednesday evening, at 6:30, the annual banquet and entertainment will be given by the Travelers' Auxiliary Association. For many years the travelers have entertained royally on this night of the convention and this year will be no exception, so prepare for a wonderful time.

Thursday, March 8

At 10:30 Thursday morning, the closed executive session will be held. This meeting will be for active members only. Reports of committees and officers, the election of officers, selection of the next convention city and other business matters will compromise the program.



Parts for Underfeed Favorite Hot Water Boiler

From Dubuque Radiator Works, 1255 Central Avenue, Dubuque, Iowa.

Kindly inform us who makes parts for the Underfeed Favorite Hot Water Boiler.

Ans.—Williamson Heater Company, 337 West Fifth Street, Cincinnati, Ohio.

Lawn Mower Sharpeners

From John G. Moericke, Bonduel, Wisconsin.

Please advise who manufactures lawn mower sharpeners.

Ans.—Luther Grinder Manufacturing Company, 285 South Water Street, Milwaukee, Wisconsin, and Richards-Wilcox Manufacturing Company, 316 West Third, Aurora, Illinois.

Random Notes and Sketches

By Sidney Arnold

"The essence of humor is sensibility; warm, tender fellow-feeling with all forms of existence."—Carlyle.

Lew A. Denoyer, representing the Canton Art Metal Company, Canton, Ohio, came into Chicago from Ottawa, Illinois, his home, on Tuesday of this week and spent an hour or so at our office. Mr. Denoyer is all set for the convention of the Illinois Sheet Metal Contractors' Association to be held at Rock Island, Illinois, in April. He says that preparations are going forward at a rapid rate, and gave us the assurance that this will be one of the best and most well attended conventions that the Illinois men have put on.

* * *

Mr. Orcutt, sheet metal contractor of Harvey, Illinois, dropped into the office on Tuesday of this week seeking some books, specification forms and other information in connection with his sheet metal shop. We were very glad to have been able to be of service to Mr. Orcutt, and hope that other sheet metal contractors and warm air heating men will not hesitate to drop in while in Chicago whenever the occasion demands.

* * *

Wilson (angrily) — "Professor, I'm surprised to hear that your chickens have been over the wall scratching up my garden."

The Professor (with dignity) — "My dear sir, that can hardly be regarded as a phenomenon. If your garden had come over the wall and scratched my chickens I could have understood your astonishment."

* * *

A keen-eyed mountaineer led his overgrown son into a country schoolhouse. "This here boy's arter larnin'," he announced. "What's yer bill o' fare?"

"We teach arithmetic, algebra, geometry, trigonometry—"

"That'll do," interrupted the old man, "load him up with triggerometry. He's the only poor shot in the family."

Two workmen were wheeling dirt in barrows. Charles Hall of Hall-Neal, Indianapolis, went up to one and said: "Look here, you! Your mate's wheeling four loads to your one!"

"Well," said the workman, "don't blame me. I've told him about it half a dozen times already."

* * *

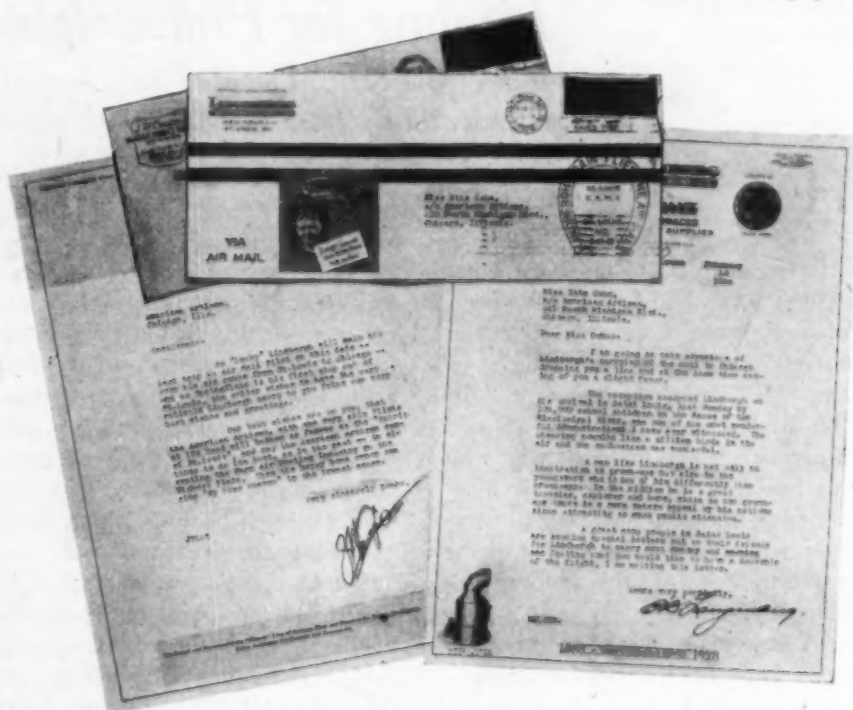
I had the extreme pleasure of a visit from Charles Gohmann, President of Gohmann Brothers & Kahler Company, New Albany, Indiana, on Friday of this week. Mr. Gohmann was in the city on business and came in to look over some of the old stove relics we have in the office.

* * *

Happy Fate of the Man Who—

Once there was a man who admitted that he read his trade paper. This is what happened to him:

His wife fell in love with him all over again, after twenty years of married life.



Two Goodwill Letters Sent to American Artisan by Air Mail Carried by Colonel Charles A. Lindberg

His children worshiped him as a man who "knew his stuff."

His competitors became afraid of him.

His local newspaper sent out a reporter to interview him and wrote a series of stories about his career.

They also took a photograph of him reading his trade paper.

The wholesalers took an interest in him.

Manufacturers took an interest in him.

Local architects and contractors began to ask him to take jobs—at his own figure.

Home owners wouldn't hear of having anyone but him in their homes to take care of their warm air heating and sheet metal work.

Result: He became a wealthy man.

Now—the moral of this tale is that it has nothing to do with this man who admitted that he read his trade paper. The point is that all those men who had been reading their trade papers for years, but who liked to make it seem as if they were "too busy to read," were jealous of the attention their friend got. They had learned that it was a mighty good admission to make—that they did read the trade paper.



Permanent Warm Air Furnace Exhibit of the Philadelphia Furnace Company, in the Chestnut Street Arcade, Philadelphia, which has been Responsible for the Reviving of Interest in Warm Air Heating Equipment by the Customers of the Company

WINDOW DISPLAY Revives Interest in Warm Air Heating for Philadelphia Firm

Had Practically Decided to Discontinue Warm Air Heating Phase Because of Price Competition

HERE'S a warm air heating man who has been thoroughly sold on the power of display to attract customers to his store. That man is T. H. Faust of the Philadelphia Furnace Company, Chestnut Street Arcade, Philadelphia. In fact Mr. Faust thinks so well of the display idea that he has created a permanent one in connection with his business. The display is illustrated in the accompanying illustration, which shows one section of the exhibit floor of this progressive company.

A little over a year ago this company had about decided to discontinue handling warm air furnaces, because of the low standing which that product had in that city, and

after having made some 10,000 installations. They found themselves practically unable any longer to interest the type of prospect to whom they wished to sell the warm air heating idea, and this in spite of the fact that they were one of the first firms to adopt the Standard Code, using it as a guide in their work. Sales continued to drop off until, as was mentioned above, they had about determined to drop that phase of their business entirely.

It was about this time that R. J. Evans, Philadelphia representative of the Lennox Furnace Company, sold Mr. Faust on the efficacy of the window display and permanent exhibit.

"This permanent exhibit is locat-

ed at the side of one of the best arcades in Philadelphia, entering from the Chestnut Street side and running through to another street," says C. H. Schecter of the Lennox Furnace Company. "This firm occupies both sides of the entrance to the Arcade, one with their furnace display and the other with gas ranges and other household appliances.

"The results they have secured during the last year from this display have placed them permanently back in the furnace business in a very aggressive way and they have perfected a complete sales organization on furnace sales. During the last season, among the large number of furnace jobs installed are

three or four in particular that stand out prominently as heating plants of the highest type, these jobs having been installed in residences costing above \$40,000. This is an indi-

cation to other dealers of what is possible in the warm air heating business with proper attention and some real sales work put behind the business."

Infiltration of Air Through Walls Subject of Research at U. of Wisconsin

Elaborate Testing Apparatus Will Determine Accurately What Wall Infiltration Is

A VERY keen interest is being taken by the American Society of Heating and Ventilating Engineers in the subject of infiltration of air into buildings. Progress that is being made in this direction by the society is shown by the report of Professor A. C. Willard, Chairman of the Committee on Infiltration of the Society, made at the recent convention. Professor

prisingly high leakage value per square foot of wall area was reported. These early reports appeared in the Journal of the Society in February and June of 1924 and in January of 1925.

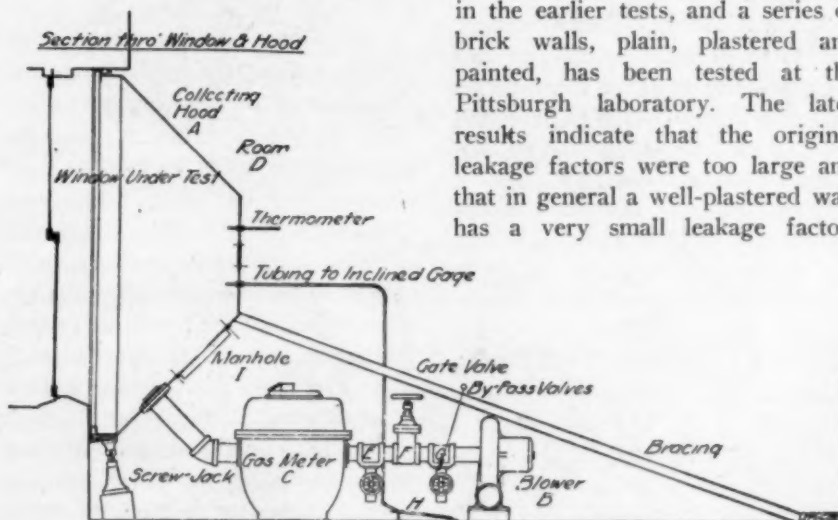
"With the organization of the Technical Advisory Committee on Infiltration, it was believed desirable further to investigate the wall leakage factor which had been obtained in the earlier tests, and a series of brick walls, plain, plastered and painted, has been tested at the Pittsburgh laboratory. The later results indicate that the original leakage factors were too large and that in general a well-plastered wall has a very small leakage factor,

the Steam and Gas Engineering Department of the University of Wisconsin, providing for cooperative research to determine the air infiltration into buildings through walls and around window sash and frames. The agreement provides for an expenditure per year of \$1,000 by the Society and an equal amount by the University. The agreement is for one year with the understanding that it will be continued if the results of the first year's work proves mutually agreeable.

"On account of certain restrictions relating to the University's research funds, it was decided to use the Society's money to cover the expense of building steel frames to support the walls, to purchase the material for building the walls, and to prepare the walls for testing. It was understood that the University's share was to be used to pay the salary of a research fellow to be appointed for the purpose for the school year of 1927-28, or to pay the part-time salary of an instructor who should devote not less than half time to this research project.

"The agreement was entered into so late in the school year that very little was accomplished before college closed in June. However, considerable correspondence was carried on and some meetings were held to determine the number and the nature of the walls to be tested. Arrangements were made with the University Board of Regents to appoint W. M. Richtman, instructor in steam and gas engineering, to devote half time to this project during the school year 1927-28, beginning the latter part of September. Mr. Richtmann has had two years' experience in operating the infiltration testing equipment. Chester Braetz, a graduate student, has also become interested in this work in connection with his thesis, and during this school year will devote about half time in assisting Mr. Richtmann at no expense to either the Society or the University.

"During the past summer vacation one test frame was built in the University shops. On account of a quarterly payment agreement with



Outline of Window Infiltration Testing Equipment Now in Use at the University of Wisconsin Laboratory.

Willard's report, appearing in the Society's Journal, follows:

"For several years the Research Laboratory of the Society has had under way an investigation of the infiltration of air into buildings. This work really began with the studies of F. C. Houghten and C. C. Schrader of the infiltration of air around window sash and frames with both plain and weatherstripped sash. At the same time a few tests were also made of the infiltration of air through a 13-inch brick wall plastered on the inside, and a sur-

which may be still further reduced by painting.

"In addition the brick walls which have been tested, plastered frame walls with wood siding and stucco and hollow tile walls, both with and without plaster, have been under investigation. Results of these tests at the Pittsburgh laboratory will be reported upon in detail by Director F. C. Houghten, and will finally be published in the Journal of the Society.

"Last April an agreement was entered into between the Society and

the Society, it was impossible to arrange to build all the frames at once on account of lack of funds. Furthermore, it seemed desirable to build one trial frame to experiment with before contracting for the building of the other frames. This move proved to be a wise one, as experience in handling this first frame and wall has resulted in changes of design which will not only make the new frames cheaper to build but will make it possible more easily to move them in and out of the testing machine.

"The Technical Advisory Committee on Infiltration outlined the following program for research, at whatever points we might find it practicable to conduct the research:

"(1) Brick wall with wood window and frame:

"(a) Determine frame leakage.

"(b) Determine reduction in leakage by locking window.

"(c) Determine reduction by applying storm sash—different methods of application.

"(b) Determine leakage for different cracks and clearances, both locked and unlocked.

"(2) 13-inch plain brick wall—joints not thoroughly slushed (as in practice, good grade of common brick).

"(3) 13-inch plain brick wall—joints thoroughly slushed, good grade of common brick.

"(4) 13-inch plain brick wall—joints not thoroughly slushed, extremely porous brick.

"(5) 13-inch plain brick wall—joints not thoroughly slushed, glazed brick.

"(6) Concrete walls — probably different mix and thickness.

"After above walls are tested 'plain,' they may be either plastered or painted.

"In November, 1927, the Common Brick Manufacturers' Association agreed to cooperate with the Society to the extent of \$1,500 in 1928 to help promote this project of research on infiltration through various brick walls. Major L. B. Lent, engineer of that association, was to be appointed a member of the Technical Advisory Committee on Infiltration.

"On November 22 Director Houghten and Major L. B. Lent visited Madison to discuss with Professor Larson the proposed co-operative tests on infiltration through walls, and after discussing the work in detail, and inspecting the testing equipment, the following program of tests was agreed

Present Status of Tests at Madison

"Wall No. 1 was completed some time ago and has been allowed to dry out for about two months. Meanwhile the testing machine has been moved so as to make it more accessible to the moving of wall frames and numerous tests have

Program of Tests on 13-Inch Walls

Wall Number	Kind of Workmanship	Kind of Mortar	Kind of Brick
1	See description below		
2	Good	Cement or cement-lime	Hard
3	Good	Lime	Hard
4	Good	Cement or cement-lime	Porous
5	Poor	Cement or cement-lime	Hard
6	Poor	Lime	Porous

upon, for the Madison Laboratory.

"It was agreed that the mortars should be mixed in the following proportions:

"Cement Mortar—One of cement and three of sand by volume and enough water to make it workable.

"Lime Mortar—One of lime and three of sand by volume and enough water to make it workable.

"Cement-Lime Mortar—One of cement, one of lime, and six of sand by volume and enough water to make it workable.

"All walls to be tested before plastering or painting. Tests to be repeated after plastering or after painting. It was the general opinion that tests should be made on 8-inch walls at a later date.

"The tests on Wall No. 1 will be carried forward as listed in the original program except that the frame leakage will be determined before and after plastering the brick wall. The program on this wall is as follows:

"Wall No. 1—brick wall with wood window and frame.

"(a) Determine frame leakage before and after plastering wall.

"(b) Determine reduction in leakage by locking windows.

"(c) Determine reduction by applying storm sash—different methods of application.

"(d) Determine leakage for different cracks and clearances, both locked and unlocked.

been made to determine any possible source of leakage inherent in the machine itself. Tests have been started on Wall No. 1.

"Working drawings have been made of improved wall frames and of a crane for moving the same. Bids have been called for and the contract has been let for five wall frames and the crane. The contractors have promised an early delivery and the frames and crane will no doubt be delivered and erected in the laboratory ready to receive the brickwork by the middle of January. Through the courtesy and co-operation of Major Lent, sample bricks have been sent us upon which tests are being made for porosity and compressive strength to aid in selecting bricks to conform with the testing program. When our selection has been made, Major Lent will furnish us with a sufficient number of brick of the proper grade to build the walls listed in the above-mentioned testing program.

"We hope to be able to present the results of tests on Wall No. 1 at the summer meeting of the Society, and hope to present the final results of the tests on the other five walls at the winter meeting of the Society in 1929.

"The laboratory is to be congratulated on the securing of cooperation from such men as Professor Larson. To him is to be given

credit for the first University co-operative agreement. He is showing continually a spirit of generosity in service, and of reliability in making his reports, technical and financial, which are an example and an inspiration to us all. The great University at Madison is backing him up to the extent that our dollars are much more than matched by the State of Wisconsin.

"It is perhaps illuminating to know that the disposition of the University is to have all of its research along our lines handled through the American Society of Heating and Ventilating Engineers.

"In addition to the laboratory tests which have been discussed in the preceding paragraphs, the research staff of the Society has recently completed a field study of the infiltration of air through plain and weatherstripped steel sash as actually set in the Southwestern Bell Telephone Building, a modern office building of the skyscraper type, located at St. Louis, Mo. Results of this work appear in the November Journal of the Society, and have been reprinted in other technical magazines. This work was done under the immediate supervision of Director F. C. Houghten, and involved many difficulties which were finally overcome by the development of new methods and special types of testing equipment.

"One set of apparatus, identical with the five sets used in the Southwestern Bell Telephone Building in St. Louis, was attached to a window in the Grand Central Palace Building in New York as an exhibit during the Power Show. Besides serving as a very satisfactory exhibit in which a great many people were interested, data was actually collected on the window. This was a pivoted window, fairly loose and showed a very high leakage."

E. W. Hiatt Says Scranton, Pa., Offers Opportunity for Furnace Installer of Right Kind

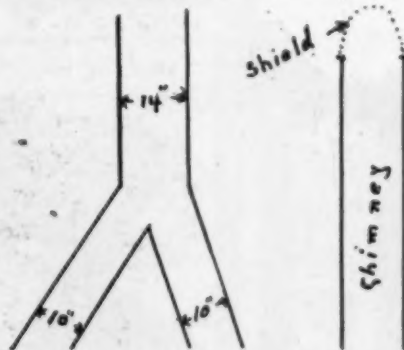
E. W. Hiatt, 6423 Northfield Avenue, Detroit, Michigan, says there is a good chance for some warm air furnace installer to get into the business in Scranton, Penn-

sylvania. He writes as follows: "Your letter addressed to Scranton, Pa., reached me in Detroit. I am sorry that I did not get any photos of the cornice work we did down there.

"Every building erected there has at least a little cornice work on it, and all wall copings are made of galvanized iron or copper instead of tiles. But the warm air furnace business is sadly neglected there. There is a good chance for some hustler there."

Back Draft Problem Easily Solved by Installing Shield

John G. Schraer of the sales department of the Monitor Furnace Company, Cincinnati, Ohio, has a corrective for the chimney not



Illustrating Mr. Schraer's Idea

drawing and the back draft. Mr. Schraer writes as follows: To AMERICAN ARTISAN:

Referring to page 110 of your January 21, 1928, issue of AMERICAN ARTISAN regarding chimney difficulties.

The following correctives have been gleaned from ten years' experience in the warm air furnace industry and I know they will work out:

The reason the chimney does not draw is that there are two openings into the same flue. I have seen them work, but rarely under this condition. On one installation we installed two 28-inch firepot furnaces in a building, each furnace carrying a 10-inch smoke pipe, and only one chimney. We connected these two 10-inch smoke pipes—and the furnaces stand 20 feet from the flue—into a "Y" branch meas-

uring 14 inches, and connected this 14-inch pipe to the chimney, and it works like a charm. Of course, this is quite a large chimney.

Relevant to the back draft, the attached crude sketch may put across what I have in mind. We remedied this condition at home by building a shield over the flue as indicated. As the wind comes over the peak of the roof toward the chimney, it whips down the chimney, causing a back draft. When the wind blows over the chimney and then over the peak of the roof, this back draft is not in evidence.

I am of the opinion the above suggestion will remedy the back draft.

National Advertising of Warm Air Heating to Include Three Mediums

Approval has recently been given to the advertising schedule for 1928 compiled from the experience gained from last year's effort.

Added to the list of magazines in which association advertising appeared on a regular schedule during 1927 will be *Small Home*, *Keith's Beautiful Homes* and *Christian Herald*.

The combined circulations of these magazines represent a solid citizenry, owning their own homes, interested in home affairs and with sufficient means to keep their homes in good order.

Every salesman traveling for a member concern and every dealer should know in which magazines National Warm Air Heating and Ventilating Association advertising is to appear and should feature this advertising in their sales solicitations. The fact that they are backed by national advertising, by a combined interest representing probably 85 per cent of the warm air furnaces manufactured is a sales help that can be used to good advantage.

Reprints of the advertisements are sent in advance of their appearance to all those who request them. They should be displayed in dealer's windows and should be carried by every salesman.

Armco Appoints Six Junior Vice Presidents

American Rolling Mill Company, Middletown, Ohio, has appointed six junior vice presidents, as follows: Weber Sebald, in charge of commercial development; John B. Tytus, structural engineering; J. C. Miller, representative at Ashland, Kentucky; D. E. Epplesheimer, special assistant in general management; Bennett Chapple, advertising and publicity; A. K. Lewis, special representative at Butler, Pennsylvania.

Furnace Makers Exhibit at Atlantic Seaboard Show

Warm air furnace, register, and sheet metal product manufacturers exhibit at Pennsylvania and Atlantic Seaboard Retail Hardware Dealers' Association exposition last week:

Brillion Furnace Company, Brillion, Wisconsin. New grey front furnace and suction furnace cleaner. M. P. Ohlsen, D. I. Heaps.

Berger Brothers Company, Philadelphia, Pennsylvania. Complete line of Berger Brothers conductor, gutter, hooks and hangers, small malleable castings Quaker City mitres, ends, caps and outlets. J. Ross Sullinger.

David Lupton's Sons Company. Complete line. C. Neff and S. Tarod.

Fox Furnace Company. Sunbeam cabinet heaters. T. B. Valiant.

Hart & Cooley Company. Registers. Represented by Crall-Chase and Company, Camden, New Jersey.

Lennox Furnace Company, Syracuse, New York. Equator furnace, new green front, Torrid Zone furnace, new aluminum finish front. F. S. Hynds, D. Norris, C. H. Schechter, J. T. Lennon, F. F. Ponderly, J. Deane Davis and R. J. Evans.

Peck Stow & Wilcox Company, Southington, Connecticut. Full line of machines and tools. Geo. D. Arnold, W. K. Hughes, Fred Foster, John Dolan.

Tuttle & Bailey Manufacturing Company, New York City. Registers. T. A. Warner, E. P. Russell and E. Mollander.

The Unishear Company, New York City. Mighty Midget Unishear and larger Unishear. W. Steindorff, Herbert J. Heller and H. H. Geldner.

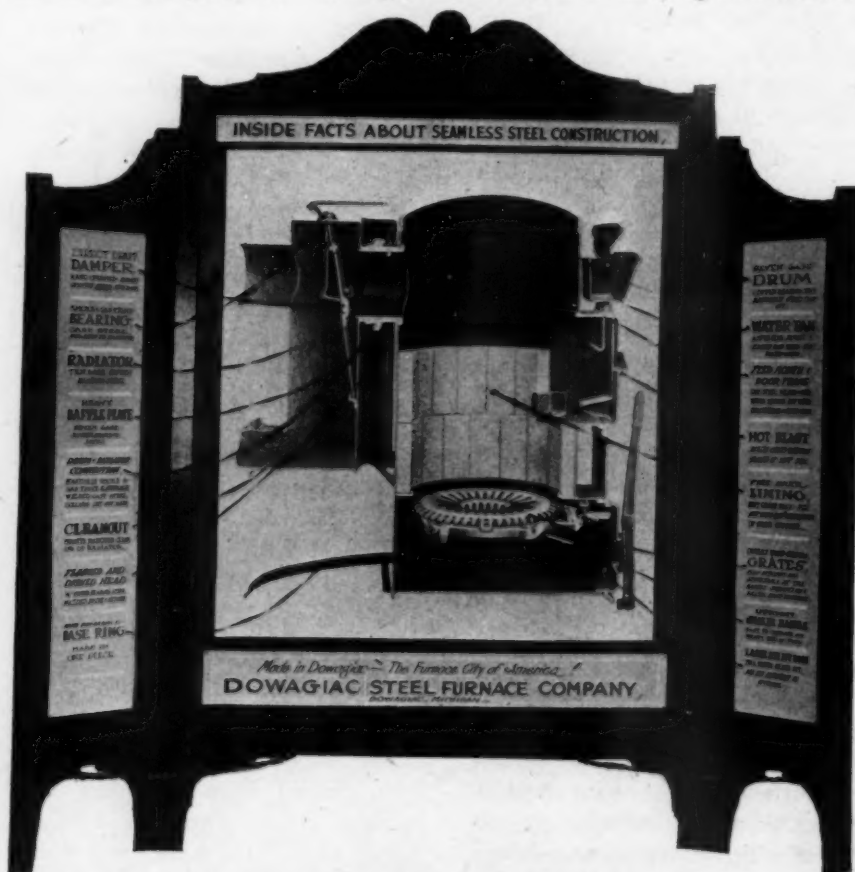
New Steel Furnace Makes Appearance at Michigan Hardware Show, Detroit

Making its debut at the recent Michigan Retail Hardware Dealers' Association exposition, held at convention hall, Woodward Avenue, Detroit, Michigan, the Dowagiac

some idea of what the men visiting delegates to the Michigan hardware show saw.

Chiefly because of the unique background screen, the company's exhibit brought unusual attention from the visiting hardware men throughout the busy four days of the show. Dee Carney and R. S. McNaney, representing the new Dowagiac concern, received enthusiastic compliments over their product and the display.

This background screen showed, in the large center panel, the largest photograph of a sectional view of a furnace ever exhibited to the trade, being four by five feet in actual size. On either wing of the screen,



Unique Display, Showing the Sectional View, with Complete Description of All Parts of the Dowagiac Seamless Steel Furnace, Forming Important Part of the First Public Showing of the Furnace at Detroit Before the Michigan Retail Hardware Dealers' Association, Detroit, February

seamless steel furnace, manufactured by the Dowagiac Steel Furnace Company, Dowagiac, Michigan, comes into the warm air heating industry replete with the latest discovered features found to be essential to perfect warm air heater construction. The accompanying illustration will give the reader

neatly printed, were descriptions of the various parts of the furnace, with ribbons leading to the actual parts in the picture. The frame and photograph proper are in black, with the background of the panels an attractive shade of red, and the lettering in red and black on a cream ground.

For Window Displays

The idea of this background, which proved so captivating to the hardware men, was developed by Lee F. Collier, Advertising Manager. Mr. Collier is now working on a plan to make window displays of a similar nature for the use of dealers in their stores.

This new furnace is already in the hands of many Dowagiac Steel Furnace Company's dealers and the number of representatives is rapidly mounting over the country.

The second public showing of the steel furnace and display is scheduled to take place at Kalamazoo, Michigan, at the Hotel Burdick, March 5, 6, 7, 8. The occasion is the annual convention of the Michigan Sheet Metal and Roofing Contractors' Association.

The plant in Dowagiac is now in production on all four sizes of its furnace, say officials of the company, and indications are splendid for a first year that will surpass the most sanguine hopes of its officials. Perhaps the reason for this early success is the fact that each department of the company is headed by men well versed in their particular branch of the furnace game, who brought their years of experience into the new enterprise, thus avoiding the necessity of experimenting and feeling their way in untried paths.

Sam Allston Becomes Advertising Manager International Heater Company

L. R. Taylor, recently promoted to Advertising Manager of the International Heater Company, Utica, New York, has been made Vice President of the company.

Announcement was also made that Samuel H. Allston, Prospect Apartments, Herkimer, has been appointed Advertising Manager of the International Heater Company, Utica, New York. Mr. Allston has been engaged in publicity work since his graduation from the University of Pennsylvania in 1922.

Before entering the advertising field, Mr. Allston was engaged in newspaper work. In 1922 he was

first connected with the news staff of the Iliion Daily Citizen, Iliion, New York, and later became city editor of that paper. He joined the news department of the Troy, New York, Morning Record as a night editor and later transferred to the Worcester, Massachusetts, Telegram Gazette as financial editor of both papers. Then he returned to Utica, New York, to join the news staff of the Utica Daily Press and was later transferred to the merchandising department. For a period he was managing editor of the Iliion, New York, Community Review and for two years was historian of the Village of Iliion, New York.

Mr. Allston entered the Advertising Department of the International Heater Company in May, 1924, and became Assistant Advertising Manager in April, 1925. He is also editor of "International News," the company's house organ.

In 1927, thirty International Heater Company direct mail advertising pieces comprising several campaigns were chosen to form part of a National Graphic Arts Exhibit from among those prepared by 125 national advertisers. The entire exhibit included national direct mail campaigns prepared by only 50 advertisers of this large group.

Window Sweating Problem Comes to the Fore Again

The annoying problem of window sweating is with us again. L. N. Crouthamel, warm air furnace installer at 916 Main Street, Bethlehem, Pennsylvania, is confronted with the problem of window sweating in a bungalow in which he has a warm air furnace installation. The particulars, as described by Mr. Crouthamel, are as follows:

I have one installation of a warm air circulating system, the only one thus far that I have had any trouble with—excess moisture or window sweating.

The building, a bungalow, is new. It is metal weather-stripped and apparently very tight.

If any water at all is used in the vaporizing pan, the windows will at once start to sweat, to the extent, in cold weather, that the water will run down over the panes and over the sill onto the floor, which, of course, is very annoying. However, if no water is put into the pan, this trouble does not occur; but the owner insists on having the humidity in the circulation. He claims that he is required to fire stronger when not using the humidifier; he notices a difference in his air throughout the house.

The installation consists of a Caloric pipe furnace, with the following runs leading off the furnace: one 12-inch to living room; one 10-inch to bedroom; one 8-inch to bathroom; one 10-inch to a second floor unfinished room, not being used; one 8-inch to kitchen, and a 10-inch to the dining room, making a total of six runs capable of delivering 447 square inches of warm air. The furnace is a 20-inch, rated at 480 square inches.

The cold air returns are located, one 12 by 14-inch in the bedroom, one 12 by 14-inch in the dining room, another from dining room of about 12 by 34-inch, and one from the hall leading off the living room of about 16 by 34-inch, all leading into a duct under the floor into a 24-inch down pipe. The shoe is 11 inches high by 41 inches wide, the height being just to the line of the fire pot or top of the ash pit. The down pipe enters the boot about 18 inches away from the casing.

The owner claims that he cannot heat the house satisfactorily when not using the humidifier. Have you any suggestions to offer to correct this trouble?

If you have had a similar experience and the question was answered satisfactorily, I would very much appreciate learning how the difficulty was remedied.

* * *

L. M. Burt, President of the Greater Chicago Warm Air Heating Association, says that in all probability the window sweating complained of by Mr. Crouthamel's

customer is caused by cold ceilings in the bungalow. The warm air coming up from the registers strikes the cold ceiling, causing condensation, which collects on the windows and the walls.

"The corrective measure for this," says Mr. Burt, "is insulation of the ceilings."

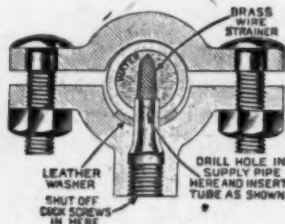
Northwest Furnace Builders' Association Elects D. S. Robinson Its Head

D. S. Robinson, Tacoma, Washington, has been elected President of the Northwest Furnace Builders' Association. W. H. Carston, Majestic Furnace & Manufacturing Company, Seattle, Washington, was made Vice President, while Floyd Oles, Manufacturers' Association of Washington, was selected as Secretary-Treasurer of the organization.

The membership of the Northwest Furnace Builders' Association comprises manufacturers of warm air furnaces in Washington and Oregon.

S. & W. Manufacturing Company Has New Skuttle Humidifier —Improved Valve and Float

The S. & W. Manufacturing Company, 312-20 North May Street, Chicago, have recently perfected the Skuttle improved automatic humidifier to be used in connection with the evaporating pan in any warm air furnace. This new humidifier, together with the im-



Illustrating the Device

proved valve and float, permit direct connection to the city water main or any other source of water supply without the slightest danger of overflow, causing flooded basements, say the manufacturers. The valve is interchangeable.

Installation is very simple and

gives the installer an added talking point in that it avoids the necessity of refilling the water tank or humidifier by hand.

Complete details concerning the new device can be had by writing the S. & W. Manufacturing Company.

Green Foundry and Furnace Works, Des Moines, to Hold School

The Green Foundry and Furnace Works of Des Moines, Iowa, is planning to hold no less than seven schools of instruction for its salesmen and dealers during the coming spring season.

Like many other manufacturers, the Green people are keenly alert to the greater sales possibilities opened up through forced air and also to the ability of a good forced air system to change many furnace jobs which are at present unsatisfactory into satisfactory jobs. Therefore, they have arranged with J. C. Miles, Vice President of the Warm Air Furnace Fan Company, to speak at each of these group meetings which will be attended by both dealers and salesmen.

The first meeting is scheduled to open at Des Moines, Iowa, Monday, February 27th, and it is interesting to note that from 10 o'clock the first day to 10 o'clock the second day, the instruction and discussion revolves entirely around "Forced Air Heating." Mr. Miles presents the subject in a comprehensive address with examples and questions and open discussion are the order of the program for the entire evening session.

The list of the points at which the schools of instruction will be held includes, Des Moines, Iowa, Savery Hotel, February 27th and 28th; Peoria, Illinois, Jefferson Hotel, March 1st and 2nd; Madison, Wisconsin, Loraine Hotel, March 5th and 6th; Minneapolis, Minnesota, West Hotel, March 8th and 9th; Sioux Falls, S. D., Carpenter Hotel, March 12th and 13th; Lincoln, Nebraska, Cornhusker Hotel, March 15th and 16th; Kansas City, Missouri, Baltimore Hotel, March 19th and 20th.

Who Manufactures Vim Pipe Shears and Can Openers?

TO AMERICAN ARTISAN:

Please let me know who manufactures Vim pipe shears and can openers.

B. F. REED.

Woodworth, Louisiana.



South Dakota Retail Hardware Association, Coliseum Building, in Sioux Falls, February 27, 28, 29, 1928. Charles H. Casey, Secretary, Nicollet at 24th Streets, Minneapolis.

Michigan Sheet Metal and Roofing Contractors' Association, Hotel Burdick, Kalamazoo, Michigan, March 5, 6, 7, 8, 1928. Secretary, Frank E. Ederle, 1121 Franklin Street, Grand Rapids, Michigan.

Iowa Sheet Metal Contractors' Association short course to be held at the university at Ames, Iowa, March 14, 15 and 16, 1928.

Illinois Sheet Metal Contractors' Association, Fort Armstrong Hotel, Rock Island, April 11 and 12. Secretary Fred J. Graeff, 222 East Washington Street, Springfield, Illinois.

Southern Hardware Jobbers Association, American Hardware Manufacturers Association, Edgewater Gulf Hotel, Biloxi, Mississippi, April 16 to 19, 1928. Secretary-Treasurer John Dohnan, 923 American National Bank Building, Richmond, Virginia.

National Warm Air Heating and Ventilating Association, Hotel Stevens, Chicago, Illinois, April 24, 25 and 26, 1928. Secretary Allen W. Williams, 174 East Long Street, Columbus, Ohio.

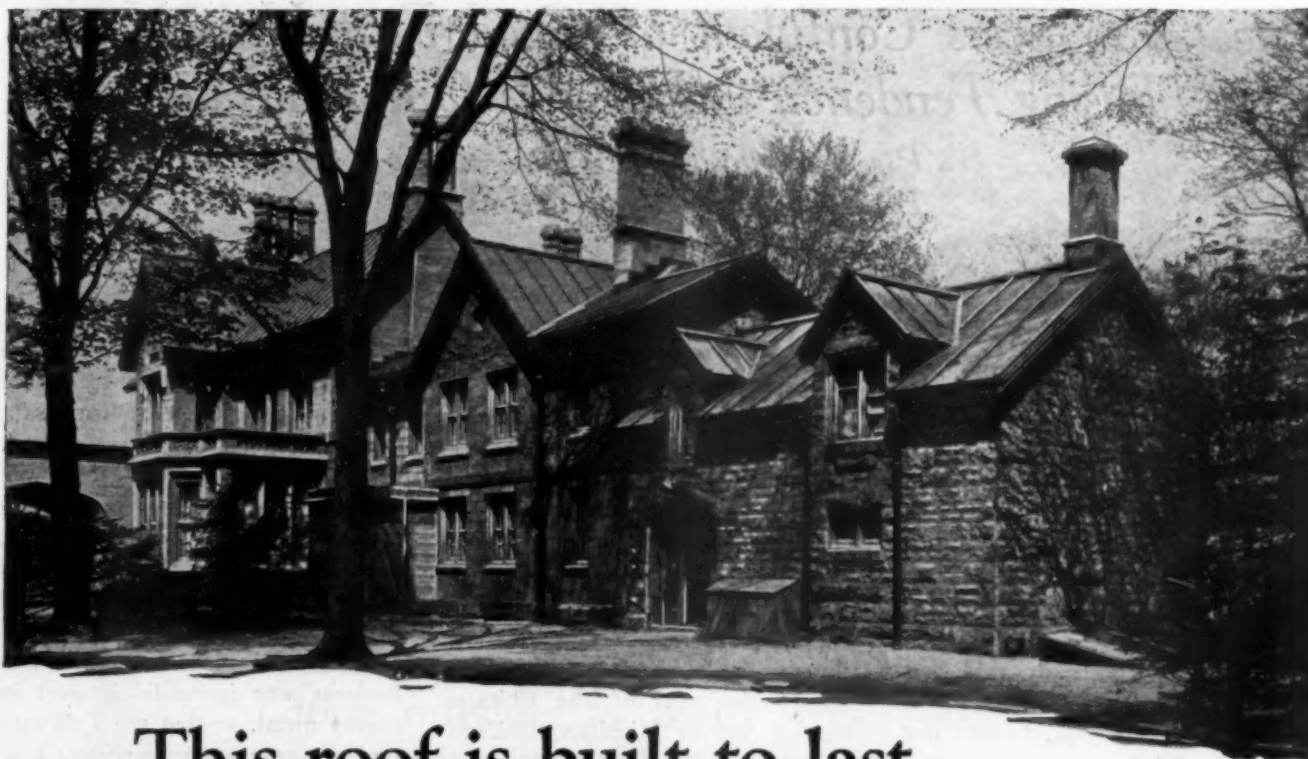
Texas Sheet Metal Contractors' Association, Houston, Texas, May 7 and 8, 1928. Secretary, Harry L. Stanyer, 2422 Alamo Street, Dallas.

National Association of Manufacturers of Heating and Cooking Appliances, Hotel Statler, Detroit, Michigan, May 9 and 10. Secretary Allen W. Williams, 174 East Long Street, Columbus, Ohio.

Arkansas Retail Hardware Association, Little Rock, during the month of May, exact dates for the meeting to be determined later. L. P. Biggs, secretary, 815-16 Southern Trust Building, Little Rock.

National Association of Sheet Metal Contractors of the United States, the Ohio Sheet Metal Contractors' Association, joint convention, Hotel Statler, Cleveland, Ohio, May 22, 23, 24 and 25, 1928. J. M. Saunders, 215 Plymouth Building, Cleveland, Ohio, convention chairman.

Pennsylvania Sheet Metal Contractors' Association and Distributors' and Salesmen's Auxiliary, June 19, 20 and 21, 1928, Hotel Lawrence, Erie, Pennsylvania. Secretary, W. F. Angermeyer, 7253 Frankstown avenue, Pittsburgh, Pa.



This roof is built to last as long as the sturdy walls

WHEN Mr. Harry Oakes built his residence on Dufferin Island, Niagara Falls, Ontario, he chose materials of permanence. The thick walls are of stone, and the roofing, gutters, flashings and downspouts are of Anaconda Sheet Copper, installed by James Gow and Sons of Toronto.

Purity is the measure of long life in copper. Anaconda Copper is

guaranteed 99.9% pure—yet costs no more than good copper should. Anaconda jobs are easy to sell because they stay in service. That is why Anaconda Copper is used in greatly increasing quantities every year.

Stocks in the form of standard Sheets, Rolls and Economy Strips are maintained by leading distributors, assuring prompt deliveries in all parts of the country.

THE AMERICAN BRASS COMPANY

GENERAL OFFICES: WATERBURY, CONNECTICUT

Offices and Agencies in Principal Cities

Canadian Mill: ANACONDA AMERICAN BRASS LIMITED, New Toronto, Ontario

ANACONDA COPPER

BRASS ANACONDA BRONZE



Steel Producers Confident of Good First Half Year— Rising Tendency in Prices Is One Indication

Pig Iron Prices Stronger — New Business in Nonferrous Metals Slow

LIGHT steel products, especially sheets, have imbibed the moderately-upward trend which has described demand for heavy finished steel recently, and some makers have accumulated modest backlogs. Heavy shipments are going directly into consumption. Steel corporation subsidiaries continue to operate at about 90 per cent, with the entire industry approximating the 85 per cent rate of a year ago.

Among producers of steel generally there is a growing confidence in the first half year. Fears that the exceptional improvement since late December has been based too largely upon automotive requirements have been dissipated, as February thus far appears to have topped January bookings and output slightly and automotive business is a smaller percentage of the total than in January.

The rising tendency in prices also is indicative, and invoices in the next quarter are expected to reflect more of the advances imposed in the past 60 days. On account of the political situation the industry is not now looking beyond first half.

Pig Iron

The pig iron market at Pittsburgh still is devoid of interest. While two quotations have been submitted to one concern at \$17.50, base, valley, other makers still are willing to sell at \$17.25. Other inquiries are small, as are current sales.

Releases on contracts are numerous and consumers generally are anxious for deliveries. This is reducing stock-piles. In one or two instances daily shipments are equal only to daily output. One middle interest has issued an inquiry for 2,000 tons of foundry iron, possibly of speculative character.

Bessemer activity is confined to single carloads at \$17.50, valley.

Nothing new is noted in basic. Valley producers are maintaining \$17, valley, as a nominal quotation.

Close to 150,000 tons of pig iron has been sold for second quarter in the Chicago-Milwaukee district and in Michigan. Interest is active for the second period although buying is done usually without formal inquiry. Several heavy tonnages of foundry iron were placed as well as an important basic tonnage. Stiffening in the market at Granite City, Illinois, has strengthened the market to the west of the Chicago district, but in Michigan, Chicago sellers meet Toledo and Cleveland competition.

At Birmingham pig iron purchases are small. Prices are firm at \$16, base, Birmingham. Furnace yard stocks are larger than at any time in the past year.

Copper

Copper prices have been at a range of 14.00 cents to 14.12½ cents, Connecticut, the higher figure representing the asking price of most producers, while a few are in between, and a little metal might be had at the lower figure. None of these prices represents much business since a little buying was done at the higher price about a week ago.

Export business has been light and the price unchanged at 14.50 cents c. i. f. European port. The various classes of products are taking good amount of copper except in the case of wire. The latter remains light. Product prices are unchanged.

Zinc

Prime Western zinc business remains slow and the price is weak. It has been thought that business would become more active and the price firmer when 5.50 cents, East St. Louis, was reached, but that did not seem to be the case, as prompt metal quickly became available

under this figure. High grade is unchanged.

Tin

Prices of tin have continued to fluctuate rapidly and though there was some appearance of firmness a few days ago, easiness reappeared. The break in the stock market was a factor in the latter turn. Also there was lack of buying support, though a few days ago the amount of business with consumers was fair.

A strengthening factor in this business was increased interest in nearby metal, so that the February statistics now are expected to look less adverse to sellers than had been expected. The market continues perplexing, with the price lower than generally had been expected.

Lead

The New York price of lead has gone down 10 points, making ¼-cent in less than two weeks. The East St. Louis price in the past week has dropped ⅛-cent. Business in this country is good, though confined to prompt buying on account of weakness. The downward course of prices abroad is forcing the market here down.

Solder

Chicago warehouse prices on solder are as follows: Warranted 50-50, \$35.00; Commercial 45-55, \$32.00; plumbers', \$29.00; all per 100 pounds.

Old Metals

Wholesale quotations in the Chicago district, which should be considered as nominal, are as follows: Old steel axles, \$15.50 to \$16.00; old iron axles, \$21.00 to \$21.50; steel springs, \$14.75 to \$15.25; No. 1 wrought iron, \$11.00 to \$11.50; No. 1 cast, \$12.75 to \$13.25, all per net tons. Prices for non-ferrous metals are quoted as follows, per pound: Light copper, 9 cents; zinc, 3½ cents; cast aluminum, 13¾ cents.

Prest-O-Weld pays for itself

How soon will this piece of equipment pay for itself?

Whether you use Prest-O-Weld for repair or construction work you need only five good jobs, that you formerly could not do or had to have done outside, to make this equipment pay for itself.

It is therefore not so much a question of whether you can afford a Prest-O-Weld kit as whether you can afford to be without one.

OXWELD ACETYLENE COMPANY

Unit of Union Carbide and Carbon Corporation

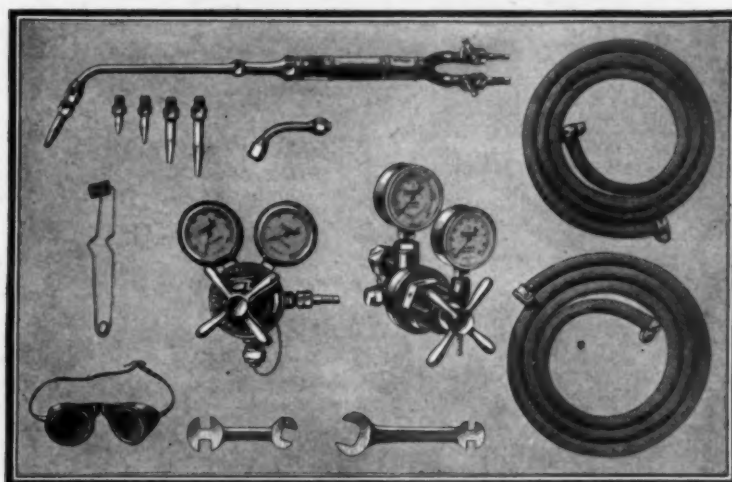


Chicago
3642 Jasper Place

Long Island City, N. Y.
Thompson Ave. & Orton St.

San Francisco
8th and Brannon Sts.

PREST-O-WELD



Mention **AMERICAN ARTISAN** in your reply—Thank you!

Chicago Warehouse Metal and Furnace Supply Prices

AMERICAN ARTISAN is the only publication containing Western Metal, Furnace Supply and Hardware prices corrected weekly

METALS

FIG IRON

Chicago Fdy., No. 2	.....\$18 50
Southern Fdy. No. 2	.....22 01
Lake Superior Charcoal	.....27 04
Malleable	.....18 50

FIRST QUALITY BRIGHT TIN PLATES

1C 20x28 112 sheets	.....\$25 10
IX 20x28	.....29 60
IXX 20x28 56 sheets	.....16 20
IXXX 20x28	.....17 65
IXXXX 20x28	.....18 95

TERNE PLATES

IC 20x28, 40-lb. 112 sheets	Per Box \$25 00
IX 20x28, 40-lb. 112 sheets	27 75
IX 20x28, 25-lb. 112 sheets	21 15
IX 20x28, 25-lb. 112 sheets	22 80
IC 20x28, 20-lb. 112 sheets	19 55
IV 20x28, 20-lb. 112 sheets	22 05
IC 20x28, 15-lb. 112 sheets	18 05

"ARMCO" INGOT IRON PLATES

No. 8 ga. up to and including 1/4 in.—100 lbs.\$4 55
--	-------------

COKE PLATES

Cokes, 80 lbs., base, 20x28	\$13 60
Cokes, 90 lbs., base, 20x28	13 80
Cokes, 100 lbs., base, 20x28	14 00
Cokes, 107 lbs., base, 1C	14 30
Cokes, 135 lbs., base, IX	16 40
Cokes, 155 lbs., base, 56 sheets	9 20
Cokes, 175 lbs., base, 56 sheets	10 05
Cokes, 195 lbs., base, 56 sheets	10 90

BLUE ANNEALED SHEETS

Base 10 ga. ....per 100 lbs.	\$3 50
"Armco" 10 ga. ....per 100 lbs.	4 00

ONE PASS COLD ROLLED BLACK

No. 18-20. ....per 100 lbs.	\$3 75
No. 22. ....per 100 lbs.	3 90
No. 24. ....per 100 lbs.	3 95
No. 26. ....per 100 lbs.	4 05
No. 27. ....per 100 lbs.	4 10
No. 28. ....per 100 lbs.	4 20
No. 29. ....per 100 lbs.	4 35
No. 30. ....per 100 lbs.	4 45

"ARMCO" GALVANIZED

"Armco" 24. ....per 100 lbs.	\$6 15
------------------------------	--------

GALVANIZED

No. 16. ....per 100 lbs.	\$4 30
No. 18. ....per 100 lbs.	4 45
No. 20. ....per 100 lbs.	4 60
No. 22. ....per 100 lbs.	4 65
No. 24. ....per 100 lbs.	4 80
No. 26. ....per 100 lbs.	5 05
No. 27. ....per 100 lbs.	5 15
No. 28. ....per 100 lbs.	5 20
No. 30. ....per 100 lbs.	5 70

BAR SOLDER

Warranted 50-50. ....per 100 lbs.	\$35 00
Commercial 45-55. ....per 100 lbs.	32 00
Plumbers. ....per 100 lbs.	29 00

ZINC

In Slabs\$ 8 50
----------	--------------

SHEET ZINC

Cash Lots (600 lbs.)	.....\$12 00
Sheet Lots	.....13 00

BRASS

Sheets, Chicago base	.....17 1/2 c
Mill base	.....18 c
Tubing, brazed base	.....25 1/2 c
Wire, base	.....18 1/2 c
Rods, base	.....15 1/2 c

COPPER

Sheets, Chicago base	.....22 1/2 c
Mill base	.....21 1/2 c
Tubing, seamless base	.....25 1/2 c
Wire, No. 3, B & S Ga.	.....18 1/2 c
Wire, No. 10, B & S Ga.	.....19 c
Wire, No. 11, B & S Ga.	.....19 1/2 c
Wire, No. 3, B & S Ga. and heavier	.....18 1/2 c

LEAD

American Pig	.....\$7 30
Bar	.....8 30

TIN

Pig Tin ....per 100 lbs.	\$62 00
Bar Tin ....per 100 lbs.	63 00

HARDWARE, SHEET METAL SUPPLIES, WARM AIR FURNACE FITTINGS AND ACCESSORIES.

ASBESTOS

Paper up to 1/16. ....6c per lb.	
Roll board. ....6 1/2 c per lb.	
Mill board 3/32 to 1/2. ....6c per lb.	
Corrugated Paper (250 sq. ft. to roll) ....\$6 00 per roll	

BRUSHES

Hot Air Pipe Cleaning Bristle, with handle, each	\$0 85
--	--------

Flue Cleaning

Steel only, each	1 25
------------------	------

BURRS

Copper Burrs only40-5%
-------------------	------------

CEMENT, FURNACE

American Seal, 5-lb. cans, net	\$ 40
American Seal, 10-lb. cans, net	80
American Seal, 25-lb. cans, net	2 00
Pecora. ....per 100 lbs.	7 51

CHIMNEY TOPS

Adams' Revolving	Wt. Doz.	Price Doz.
4 in.	21 lbs.	\$11 00
6 in.	24 lbs.	11 50
7 in.	30 lbs.	13 50
8 in.	33 lbs.	15 00
9 in.	51 lbs.	16 50
10 in.	56 lbs.	18 00
12 in.	66 lbs.	22 00
14 in.	110 lbs.	36 00

CLINKER TONGS

Front Rank, each	\$0 75
Per doz.	8 40

CLIPS

Damper Adams No-Rivet Steel, with tail pieces, per gross	\$9 00
Tail pieces, per gross	2 50

COPPERS—Soldering

Pointed Roofing	
3 lb. and heavier. ....per lb.	40c
2 1/2 lb. ....per lb.	45c
2 lb. ....per lb.	48c
1 1/2 lb. ....per lb.	55c
1 lb. ....per lb.	60c

CORNICE BRAKES

Chicago Steel Bending Nos. 1 to 6B. ....Net	
---	--

CUT-OFFS

Gal. plain, round or cor. rd.	
26 gauge	.....30%
28 gauge	.....35%

DAMPERS

"Yankee" Hot Air 7 inch, each 20c, doz.	\$1 60
8 inch, each 25c, doz.	2 20
9 inch, each 30c, doz.	2 40
10 inch, each 32c, doz.	2 50

Smoke Pipe

7 inch, doz.	\$1 60
8 inch, doz.	2 20
9 inch, doz.	3 00
10 inch, doz.	3 75
12 inch, doz.	4 50

ADAMS No. 1 CHECK

Check and Collar Complete 8 inch, each	2 00
9 inch, each	2 25
End Check Only 8 inch, each	1 60
9 inch, each	1 85
Collar Only 8 inch, each	50
9 inch, each	65

No. 2 CHECK

8 inch, each	1 00
9 inch, each	1 00

10% Disc. on Adams No. 1 and No. 2 Check

Diamond Smoke Pipe 7 inch, doz.	\$ 2 00
8 inch, doz.	2 20
9 inch, doz.	4 80
10 inch, doz.	6 00

Adams' Sheet Metal

7 inch, doz.	\$ 1 60
8 inch, doz.	2 20
9 inch, doz.	2 60
10 inch, doz.	2 80
12 inch, doz.	3 50
14 inch, doz.	5 00

DIGGERS

Post Hole Iwan's Split Handle (Eureka) 4-ft. Handle. ....per doz.	\$14 00
7-ft. Handle. ....per doz.	36 00
Iwan's Hercules pattern, per doz.	14 90

EAVES TROUGH

Galv. Crimpedge, crated 75 & 5% Zinc, "Barnes"60%
--	----------

ELBOWS

Conductor Pipe Galv. plain or corrugated, round flat Crimp. 28 Gauge	.....60%
26 Gauge	.....45%
24 Gauge	.....15%

Galv. & Terne Steel

Plain Rd. and Rd. Corr.: 28 Ga.	.....60%
26 Ga.	.....45%
24 Ga.	.....15%

Square Corrugated

No. 28 Gauge	.....50%
26 Gauge	.....35%

Portico Elbows

Standard Gauge Conductor Pipe, plain or corrugated. Not nested	.....70 & 5%
Nested Solid	.....70 & 5%

Sq. Corr., A. & B. & Octagon

28 Ga.	.....50%
26 Ga.	.....35%

Portico

1", 1 1/4", 1 1/2"45%
--------------------	----------

Copper

16 oz., all designs50%
---------------------	----------

Zinc—

All styles60%
------------	----------

ELBOWS—Stove Pipe

1-piece Corrugated, Uniform Blue "Milcor" No. 28 Gauge. Doz.	\$1 05
5-inch	.....1 20
6-inch	.....1 20
7-inch	.....1 75

Special Corrugated

6-inch	.....\$1 00
7-inch	.....1 60

Adjustable—Uniform Blue

"Milcor" No. 28 Gauge. Uniform Blue. 5-inch	.....\$1 45
6-inch	.....1 75
7-inch	.....2 10

WOOD FACES—50% off list.

726-6-12 1/4" (100 rods)	.....\$23 68
1948-6-14 1/4" (100 rods)	.....43 63

FILES AND RASPS

Heller's (American)	.....50-10%
American	.....60-10%
Arcade	.....50%
Black Diamond	.....50%
Eagle	.....50%
Great Western	.....50%
Kearney & Foot	.....50%
McClellan	.....50%
Nicholson	.....50%
Simonds	.....60%

FIRE POTS

Clayton & Lambert's East of west boundary line of Province of Manitoba, Canada, No. Dakota, So. Dakota, Nebraska, Kansas, Oklahoma, Amarillo, San Angelo and Laredo, Texas	.....52%
West of above boundary	.....48%

Geo. W. Diener Mfg. Co. Ea.

No. 02 Gasoline Torch, 1 qt.	.....\$ 5 55
No. 0250, Kerosene, or Gasoline Torch, 1 qt.	7 50
No. 10 Tinner's Furn. Square tank, 1 gal.	12 60
No. 15 Tinner's Furn. Round tank, 1 gal.	12 00
No. 21 Gas Soldering Furnace	3 60
No. 110 Automatic Gas Soldering Furnace	10 50

Double Blast Mfg. Co.

Gasoline, Nos. 25 and 3660%
--------------------------	----------

Quick Meal Stove Co.

Vesuvius, F. O. B. St. Louis	30%
(Extra Dist. for large quantities.)	

GALVANIZED WARE

Pails (Galv. after made), 10-qt.	.....\$2 12
Tubs (Galv. after made), No. 1	.....6 00
No. 2	.....6 85

GLASS

Single Strength, A, 52-in. brackets	.....37%
Single Strength, A, 34 to 40-in. bracket	.....36%
Single Strength, A, all other brackets	.....39-5%
Double Strength, A, all sizes	.....39%

HANGERS

Conductor Pipe Milcor Perfection Wire	.....25%
Milcor Triplex Wire	.....19%

Eaves Trough

Milcor Steel (galv. after forming) List	.....plus 12 1/2%
Milcor Selflock E. T. Wire, List	.....plus 50%

HOOKS

Box V. & B. No. 1, each\$0 26
-------------------------	-------------

Conductor

"Direct Drive" Wrought Iron for wood or brick15%
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Hay

V. & B. No. 1, each\$0 26
---------------------	-------------

HUMIDIFIER

"Front-Rank," Automatic In single lots50%
In lots of 10 or more50-5%
In lots of 25 or more	.....50-10%
Vapor pans, etc., each	.....50%

LIFTERS

Stove Cover Copperedper gro. \$6 00
Alaskaper gro. 4 75

MALLETS

Tinners Hickoryper doz. \$3 25
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MITRES

Galvanized steel mitres, 28 Ga.70
26 Ga.60-20

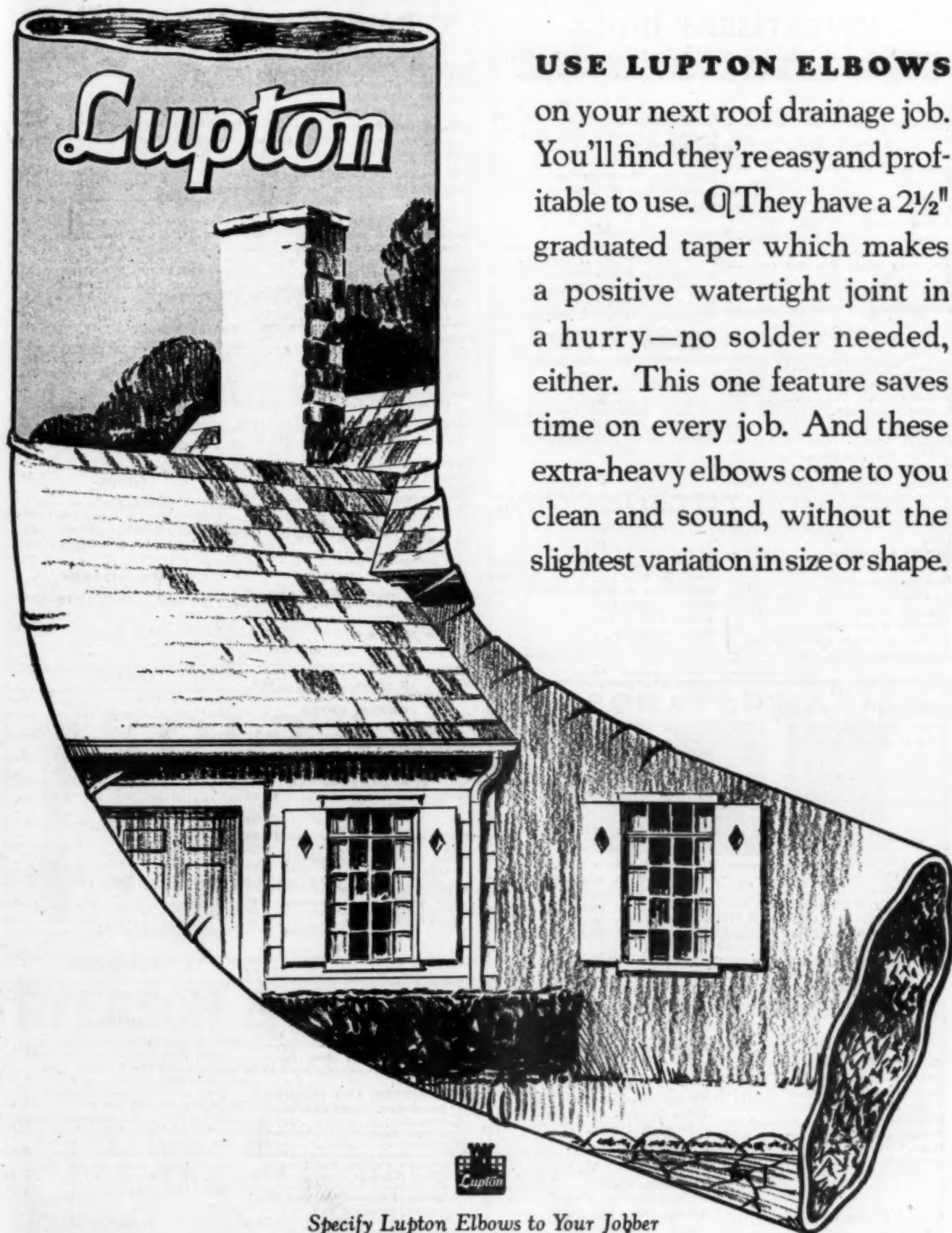
NAILS

Cut Steel\$4 35
Cut Iron4 85

Wire

Common	.....\$ 10
Cement Coated	.....3 10

(Continued on Page 165)

**USE LUPTON ELBOWS**

on your next roof drainage job. You'll find they're easy and profitable to use. Q They have a $2\frac{1}{2}$ " graduated taper which makes a positive watertight joint in a hurry—no solder needed, either. This one feature saves time on every job. And these extra-heavy elbows come to you clean and sound, without the slightest variation in size or shape.

Specify Lupton Elbows to Your Jobber

DAVID LUPTON'S SONS CO., ALLEGHENY AVENUE AND TULIP STREET
PHILADELPHIA, PENNSYLVANIA

Buy Lupton Elbows from Your Jobber

Say you saw it in AMERICAN ARTISAN—Thank you!

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NETTING, POULTRY

Galvanized before weaving. 57½-58%
Galvanized after weaving. 53½-54%

PASTE

Asbestos Dry Paste:
200-lb. Barrel \$16 00
100-lb. barrel 8 75
35-lb. pail 3 50
10-lb. bag 1 10
5-lb. bag 60
2½-lb. cartons 35

PIPE

Conductor
Cor. Rd., Plain Rd., or Sq.

Galvanized

Crated and nested (all gauges) 75-2¼%
Crated and not nested (all gauges) 70-15%

Furnace Pipe

Double Wall Pipe and Fittings 60%
Single Wall Pipe, Round Galvanized Pipe 60%
Galvanized and Tin Fittings 60%

Lead

Per 100 lbs. \$12 50

Stove Pipe

"Milcor" "Titelock" Uniform Blue Stove

28 gauge, 5 inch U. C. nested 10 50
28 gauge, 6 inch U. C. nested 11 00
28 gauge, 7 inch U. C. nested 13 00
30 gauge, 5 inch U. C. nested 9 00
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30 gauge, 7 inch U. C. nested 12 00

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6-inch, 28 ga. per doz. \$ 4 00

All Zinc

No. 11, all styles 60%

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W'r't Steel, str't or bent, per doz. \$0 75
Nickel Plated, coil handles, per doz. 1 10

POKERS, FURNACE

Each \$0 50

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Furnace Tackle. per doz. \$0 60
..... per gro. 6 00
Furnace Screw (enameled) per doz. 75

Ventilating Register

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Small, per pair 30
Large, per pair 50

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Commercial Putty, 100-lb. Kite \$3 40

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Malleable Iron Damper 10%

REDUCERS—Oval Stove Pipe

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Galv., Plain Ridge Roll, crated 75-10%
Globe Finials for Ridge Roll. 50%

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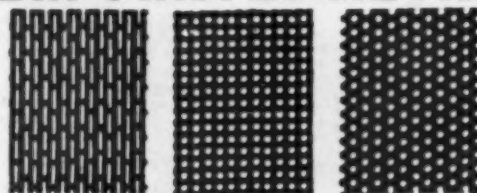
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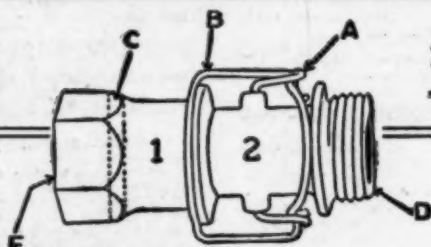
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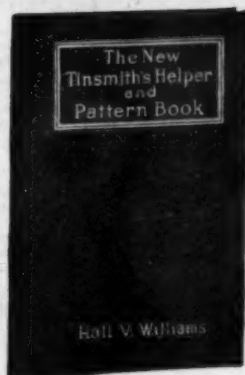
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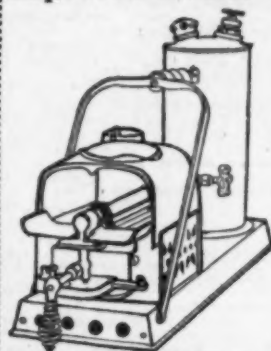
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Pecora Paint Co.,
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Milwaukee Corrugating Co.,
Milwaukee, Wis.
- Roofing—Iron and Steel.**
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Detroit, Mich.
Friedley-Voshardt Co.,
Chicago, Ill.
Inland Steel Co.,
Chicago, Ill.
Merchant & Evans Co.,
Philadelphia, Pa.
Milwaukee Corrugating Co.,
Mil., Ch'go, La Crosse, Kan. City
Osborn Co., The J. M. & L. A.,
Cleveland, Ohio
Ryerson & Son, Inc., Jos. T.,
Chicago, Ill.
Wheeling Corrugating Co.,
Wheeling, W. Va.
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Harrington & King Perforating
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- Shears—Hand and Power.**
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Peck, Stow & Wilcox Co.,
Southington, Conn.
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Unishear Co., Inc.,
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Viking Shear Co.,
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- Sheet Metal Screws—Hardened, Self-Tapping.**
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Detroit, Mich.
Inland Steel Co.,
Chicago, Ill.
Merchant & Evans Co.,
Philadelphia, Pa.
Milwaukee Corrugating Co.,
Mil., Ch'go, La Crosse, Kan. City
Osborn Co., The J. M. & L. A.,
Cleveland, Ohio
Ryerson & Son, Inc., Jos. T.,
Chicago, Ill.
Taylor Co., N. & G.,
Philadelphia, Pa.
Wheeling Corrugating Co.,
Wheeling, W. Va.
- Sheets—Iron.**
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Merchant & Evans Co.,
Philadelphia, Pa.
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- Sheets—Tin.**
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Philadelphia, Pa.
New Jersey Zinc Co., The,
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When writing mention AMERICAN ARTISAN—Thank you!

WANTS AND SALES

Yearly subscribers to the **AMERICAN ARTISAN** may insert advertisements of not more than fifty words in our Want and Sales Columns **WITHOUT CHARGE**.

Such advertisements, however, must be limited to help or situation wanted, tools or equipment for sale, to exchange or to buy, business for sale or location desired and must reach our office by Thursday of the week of publication. This privilege is not extended to manufacturers or jobbers—or those making a business of buying and selling used machines, employment agencies and brokers.

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Lightning Rods—Dealers who are selling Lightning Protection will make money by writing to us for our latest Factory to Dealer Prices. We employ no salesmen and save you all overhead charges. Our Pure Copper Cable and Fixtures are endorsed by the National Board of Fire Underwriters and hundreds of dealers. Write today for samples and prices. L. K. Diddle Company, Marshfield, Wisc.

A well established and good paying all around sheet metal and heating and ventilating business for sale, in part or whole. Well equipped for inside and outside work. Two cornice brakes and all necessary tools and machines. Will sell or rent shop. Property located in the heart of the best little city in Wisconsin. A real opportunity for a live young mechanic and business man. Reason for selling—too old to continue and have other business to look after. Address F-467, **AMERICAN ARTISAN**, 620 S. Michigan Ave., Chicago.

For Sale—Plumbing and heating establishment in town near Detroit, Mich. Fine store, good stock and tools. Reasonable rent and long lease. Inventory, \$10,000. Profits for 1927, \$7,000. Reason for selling—other business. Good land contract considered as part payment. Address G-467, **AMERICAN ARTISAN**, 620 S. Michigan Ave., Chicago, Ill.

For Sale—Hardware, furniture, heating, plumbing and electrical business on account of illness of member of firm who has been in this business 25 years. Great opportunity for right party. Address Y-466, **AMERICAN ARTISAN**, 620 South Michigan Avenue, Chicago, Illinois.

WANTED—Location for a furnace and sheet metal shop. Will consider a small stock of hardware. I have the ready cash and in no hurry. Must stand investigation. Address Z-466, **AMERICAN ARTISAN**, 620 South Michigan Avenue, Chicago, Illinois.

Wanted—Small hardware stock or good plumbing and tinshop in good town near Jobber in Central States. Have good 320 acre farm in Montana to trade for a business of this kind. Address W. C. Fisher, Saco, Montana. X-466

For Sale—Sheet metal and plumbing shop. Small line of hardware and stoves. Plenty of plumbing and metal work. New building, also 6 room house. This place is priced to sell. Address H. F. Cain, Diamond, Ohio. A-467

Wanted—Small stock of hardware with tin shop in small city or town. Wisconsin, Minnesota or Iowa preferred. Address E-466, **AMERICAN ARTISAN**, 620 South Michigan Avenue, Chicago, Illinois.

BUSINESS CHANCES

For Sale—Sheet Metal and Furnace Business in northern Ohio city. Doing very good business and have first class equipment and clean stock. One 6-room all modern residence. Priced right. Address H-467, **AMERICAN ARTISAN**, 620 S. Michigan Ave., Chicago.

For Sale—Sheet metal and furnace shop in county seat town of 3,500 population in Northeastern Iowa. Good set of tools and good business. Shop 25x40. Address H-466, **AMERICAN ARTISAN**, 620 South Michigan Avenue, Chicago, Illinois.

For Sale—Complete sheet metal shop equipment. List of items and prices furnished upon request. Address Horel-George Co., Eau Claire, Wis. E-467.

SITUATION WANTED

Position wanted by all around hardware man, also has fair knowledge of tinning and plumbing; last position as manager of store for nine years; one year as hardware salesman; permanent position only considered; married and reliable; can begin work at once; can give good references; middle west preferred. Address C-466, **AMERICAN ARTISAN**, 620 South Michigan Avenue, Chicago, Illinois.

Position Wanted—An A-1 all around sheet metal worker and layout man, age 47, wants a steady job; 34 years' experience in every phase of sheet metal work; sober, steady and a hard worker; experienced at cornice, skylight, heating and ventilating, blow piping, etc. Please state particulars and wages. Address X-465, **AMERICAN ARTISAN**, 620 South Michigan Avenue, Chicago, Illinois.

Situation Wanted by May 1—Estimator and layout man capable of taking charge of tin shop. Have had factory, heating and blow pipe experience and know the Standard Code; am 36 years old and married; had 18 years at the trade; want steady position with reliable firm. Address A-466, **AMERICAN ARTISAN**, 620 South Michigan Avenue, Chicago, Illinois.

Situation wanted by first class sheet metal worker with 25 years' experience. Can read blue prints and cut patterns for all kinds of sheet metal work, and lay out heating systems for all sizes of homes; will take charge of shop and handle men and work for employer's interests. Address W. M. Laudenschlager, 2106 Indiana Avenue, Columbus, Ohio. Y-465

Position Wanted—I am looking for a position with a furnace manufacturing company that makes furnace fittings or does installation work; position must be a year around one and location in Eastern Ohio, New York or Northern Pennsylvania preferred. Address Z-465, **AMERICAN ARTISAN**, 620 South Michigan Avenue, Chicago, Illinois.

Position wanted by first class tinner with 30 years' experience in general tin and furnace work. Have done all kinds of metal roofing, slate, tile, asbestos and built up roofings; have good habits and am married; want steady job in southern Illinois. Address W-465, **AMERICAN ARTISAN**, 620 South Michigan Avenue, Chicago, Illinois.

Sheet Metal Estimator—Heating and ventilating sheet metal roofing estimator wants position. Am a practical man and a good business getter; have done some of the biggest jobs in the country; can handle work in field, lay out my own sketches; can start about March 1st, 1928. Address Sheet Metal, Box 269, Youngstown, Ohio. B-466

Position wanted by sheet metal worker and furnace man; 20 years at trade, neat and capable of high class workmanship. Married, good habits, steady and dependable. Open for engagement at once. Iowa preferred. Address J-467, **AMERICAN ARTISAN**, 620 S. Michigan Ave., Chicago, Ill.

Situation Wanted—Plumbing and heating engineer capable of figuring heating systems, hot water, steam, vapor and warm air and make his own drawings. Close up sales. Twenty years' experience. Address O-467, care of **AMERICAN ARTISAN**, 620 So. Michigan Ave., Chicago, Ill.

SITUATION WANTED

Situation Wanted—Have you an opening for a high class stove salesman for Chicago and vicinity to sell on commission? Am well acquainted with all the trade for the past 15 years and can furnish satisfactory references. Have been manufacturing stoves but sold out my interests and I am going to devote all my time to selling. Address R-466, **AMERICAN ARTISAN**, 620 South Michigan Avenue, Chicago, Illinois.

Situation Wanted—I would like to locate with a hardware company doing retail business in a town from 2,500 to 6,000 population. I have been in the hardware and sheet metal game for about 15 years, mostly in country towns. I have had experience in farm machinery and windmills. Can go to work after March 1st. Address Q-466, **AMERICAN ARTISAN**, 620 South Michigan Avenue, Chicago, Illinois.

Position Wanted—As sheet metal worker. First class furnace man 25 years at the trade. Last five years in business for myself. Can also do plumbing and hot water heating. Want a steady job and prefer South Dakota or Iowa. State particulars and wages in your letter. Address Box 145, Parkston, South Dakota. P-466

Position Wanted—As working foreman by a first class sheet metal worker in all its branches such as may come to a first class shop. Can do pattern drafting, read blue prints and figure work. Have had 16 years of experience and married. Address O-466, **AMERICAN ARTISAN**, 620 South Michigan Avenue, Chicago, Illinois.

Position Wanted—First class sheet metal worker, pattern cutter and estimator. 22 years' experience in the trade in all its branches. Reference from present and former employers if desired both as to character and ability. Address S-466, **AMERICAN ARTISAN**, 620 South Michigan Avenue, Chicago, Illinois.

Position Wanted—By first class furnace installer capable of taking charge of shop and handling men. First class pattern cutter and can work from blue prints. Have had 25 years' experience, married and want a steady job at reasonable living wages. Can come at once. Address Bert Hawkins, Dexter, Michigan. T-466

Position wanted by a first class tinner. Can draft my own patterns, read blue prints and do inside and outside work. Married, 30 years of age, with 12 years' experience. Address S-465, **AMERICAN ARTISAN**, 620 South Michigan Avenue, Chicago, Illinois.

Position wanted by first class sheet metal worker and furnace man; 16 years' experience; can lay out most patterns and do furnace engineering, erect any furnace; also lay slate. Available at once. Address Box 325, Rochester, New York. T-465

Position Wanted—By tinner and plumber of 10 years' experience. Sober and industrious worker. Want to make a change, have steady work and will go anywhere. State wages. Address Tinner & Plumber, Box 373, Hemingford, Nebraska. J-466

Wanted—Position as tinner and plumber. I have had 30 years' experience. Steady, good habits, A-Number 1 on Hot Air furnace work. Can come at once. Married and have a family. Address L-467, **AMERICAN ARTISAN**, 620 S. Michigan Ave., Chicago.

Wanted—Permanent position by practical plumber and sheet metal worker. A real mechanic and production man carrying journeyman's license. Address K-467, **AMERICAN ARTISAN**, 620 S. Michigan Ave., Chicago, Ill.

HELP WANTED

Wanted—First class sheet metal worker and furnace man as working foreman, steady position and good opportunity for right man. Must be able to figure work, get results from men and to handle any work coming into the shop. Boozers not wanted. Prefer man who has been in business for himself. Can invest some money if you desire. Address Q-465, **AMERICAN ARTISAN**, 620 South Michigan Avenue, Chicago, Ill.

HELP WANTED

Wanted—In North Dakota town, an all round man in hardware store shop. Labor consists of anything that comes along such as repair work of all kinds—furnace, plumbing, heating and tinwork, in well equipped shop. A steady man with family preferred. Good wages the year round. Let us hear from you. Address G-466, AMERICAN ARTISAN, 620 South Michigan Avenue, Chicago, Illinois.

Wanted—First class sheet metal worker under 40 to take charge of shop. Small manufacturing concern in central Wisconsin. Must be steady and a fast worker. Can invest capital if desired. Address R-466, AMERICAN ARTISAN, 620 South Michigan Avenue, Chicago.

Wanted — An industrious go-getter. Must have experience in plumbing and tinners trade. Must be honest, reliable and sober and able to manage one of our shops. Address Illinois Plumbing and Heating Co., Du Quoin, Illinois. M-466

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For Sale—1 large pair roofing tongs, 1 pair large gutter tongs, 1 4 ft. steel straight edge, 1 set slater's tools, ripper, stake and hammer. These tools are practically new and can be bought for \$15.00. Address K-466, AMERICAN ARTISAN, 620 South Michigan Avenue, Chicago, Illinois.

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For Sale—1922 National Cash Register, electric type, A-1 condition, mahogany finish. Original price \$400.00—will sell for \$275.00. Address W-466, AMERICAN ARTISAN, 620 South Michigan Avenue, Chicago.

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for a man who has sales manager ability, one who has a business producing record and a large acquaintance among the larger dealers and the jobbing trade. No need to apply if you do not have these requirements. C467, American Artisan, 620 So. Michigan Ave., Chicago, Ill.

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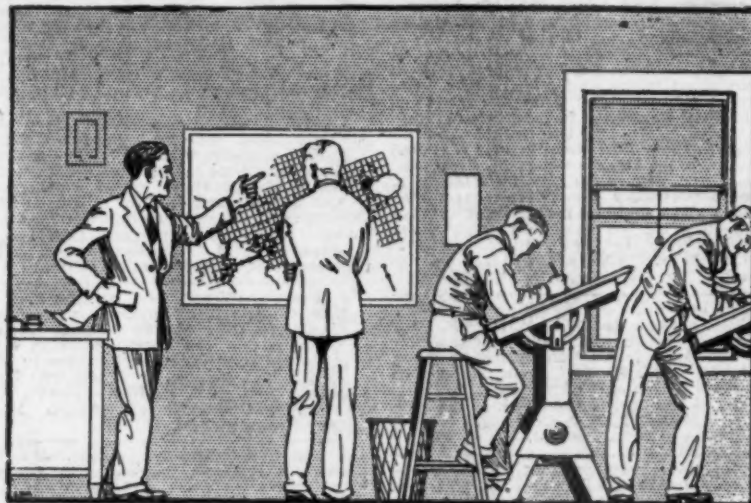
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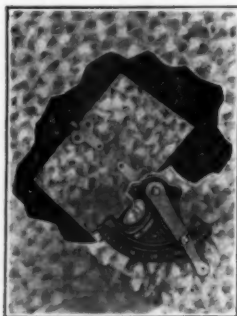
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RANTS are without a doubt
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View of a Quadrant instal-
lation with part of the duct
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